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Lavarack Barracks Ongoing Monitoring Report 2025

January 2026

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Lavarack Barracks
Ongoing Monitoring Report 2025

Department of Defence

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Approved by:	[redacted]	13 January 2026	

WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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Table of contents

Glossary and Abbreviations v

Executive summary vii

1 Introduction 1

1.1 Background 1

1.2 Objectives 2

1.3 Scope 2

1.3.1 Major deviations from the scope 2

2 Base setting 3

2.1 Base location and description 3

2.2 Management area 3

2.3 Source areas 3

2.4 Site setting 7

2.4.1 Topography and geology 7

2.4.2 Hydrology and hydrogeology 7

2.4.3 Surface water catchments 7

2.4.4 Regional climate 8

2.4.5 Vegetation 8

2.4.6 Surrounding land and water uses 8

3 Other aspects 10

3.1 Remediation projects 10

3.2 Infrastructure and development works (on-base and off-base) 10

3.3 Water and land use changes as provided by landowners 11

4 PFAS screening criteria 12

5 Sampling and analysis methodology 14

5.1 Methods 14

5.2 Deviations from SAQP requirements 14

5.3 Changes to the monitoring network 14

CONTENTS (Continued)

6 Quality assurance and quality control 15

7 Results 16

7.1 Groundwater 16

7.1.1 Groundwater elevation and flow direction 16
7.1.2 Physico-chemical groundwater quality 17
7.1.3 Groundwater analytical results 18

7.2 Surface water 18

7.2.1 Physico-chemical surface water quality 18
7.2.2 Surface water analytical results 19

7.3 Sediment 19

7.3.1 Sediment analytical results 19

8 Interpretation and discussion 20

8.1 Hydrogeology 20

8.2 Groundwater results 20

8.3 Surface water results 23

8.4 Sediment results 25

8.5 Triggers for action and/or review 28

8.5.1 Groundwater 29
8.5.2 Surface water 29

9 Conceptual site model 31

9.1 PFAS sources 31

9.2 PFAS migration pathways 31

9.3 Receptors 34

9.3.1 Human health receptors 34
9.3.2 Ecological receptors 39

9.4 Conceptual site model review 41

10 Risk profile 42

10.1 Changes to the risk profile 42

CONTENTS (Continued)

11 Conclusions 43

12 References 44

13 Limitations 46

13.1 Permitted purpose 46

13.2 Qualifications and assumptions 46

13.3 Use and reliance 46

13.4 Disclaimer 47

List of tables

Table 2.1 Known source areas of PFAS, Lavarack Barracks (to 2024) (summarised from the updated PMAP; Department of Defence [2025a]) 4

Table 3.1 PMAP project works 10

Table 3.2 Infrastructure project works 10

Table 4.1 PFAS screening criteria 12

Table 7.1 Summary of groundwater elevations measured in the Management Area 16

Table 7.2 Physico-chemical groundwater quality 17

Table 7.3 Physico-chemical surface water quality 18

Table 8.1 Groundwater monitoring locations with concentrations exceeding historical range in the October 2023 to October 2024 monitoring period 21

Table 8.2 Surface water monitoring locations with concentrations exceeding historical range in the October 2023 to October 2024 monitoring period 23

Table 8.3 Sediment monitoring locations with concentrations exceeding historical range in the October 2023 to October 2024 monitoring period 26

Table 9.1 PFAS transport pathways, Lavarack Barracks Management Area 32

Table 9.2 PFAS receptors and risk – human health (based on HHRA, [RPS/Wood 2019c]), (summarised from the 2025 PMAP [Department of Defence, 2025]) 35

Table 9.3 PFAS receptors – ecological (based on ERA [RPS/Wood 2020]) 40

CONTENTS (Continued)

List of appendices

Appendix A Figures
Appendix B Tables
Appendix C Sampling and analysis quality plans
Appendix D Sampling event reports
Appendix E Interpretative graphs

Glossary and Abbreviations

AECOM	AECOM Australia Pty Ltd
AFFF	Aqueous Film Forming Foam
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure, as amended 2013
Base	Lavarack Barracks
Catchment	An area of land where all water collects and drains into a common outlet, such as a creek, dam, or other body of water. The boundaries of a catchment are defined by the highest points of land surrounding the water body, such as ridges or hills, which direct the flow of water towards the outlet.
Corr RP	Corrected Redox Potential
CSM	Conceptual Site Model
Defence	Department of Defence
DO	Dissolved Oxygen
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EIL	Ecological Investigation Level
ERA	Ecological Risk Assessment
GWE	Groundwater Elevation
HHRA	Human Health Risk Assessment
LOR	Limit of Reporting
m AHD	Metres Above the Australian height datum
Management Area	The geographical area subject to Defence risk management actions. May include private or Defence owned detached properties beyond the boundaries of the base.
Max	Maximum
m BTOC	Metres Below Top of Casing
Min	Minimum
OCP	Organochlorine Pesticides
Off-base	Outside Defence Property
On-base	On Defence Property
OMP	Ongoing Monitoring Plan
OMR	Ongoing Monitoring Report
PFAS	Per- and Polyfluoroalkyl Substances
PFAS NEMP	PFAS National Environmental Management Plan

PFHxS	Perfluorohexane Sulfonate
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
PMAP	PFAS Management Area Plan
PSC	Potential Sources of Contamination
QA	Quality Assurance
QC	Quality Control
Risk management actions	Remediation and management actions to address potential risks to receptors from PFAS contamination
RWL	Reduced Water Level
SAQP	Sampling and Analysis Quality Plan
SER	Sampling Event Report
SFARP	So Far As Reasonably Practicable
Source	A source can be primary or secondary and is the place or event from which the contamination originated. Primary sources are areas where AFFF was used or stored. Secondary sources may be an accumulation of contamination in the environment, such as in soil, sediments, groundwater, or surface water bodies.
SWL	Static Water Level
TDI	Tolerable Daily Intake
Temp	Temperature
WSP	WSP Australia Pty Ltd

Executive summary

Introduction

AECOM Australia Pty Ltd (AECOM) and WSP Australia Pty Ltd (WSP) were engaged by the Department of Defence (Defence) to implement the Ongoing Monitoring Plan (OMP) at Lavarack Barracks in Townsville, Queensland for monitoring of select per- and poly-fluoroalkyl substances (PFAS). The OMP is linked to the 2020 PFAS Management Area Plan (PMAP; Department of Defence 2020) and the updated 2025 PMAP (Department of Defence 2025a). This Ongoing Monitoring Report (OMR), prepared by WSP, summarises the results of the biannual (wet and dry seasons) on-base and off-base groundwater, surface water, and sediment monitoring completed for the OMP in August 2023 and March 2024 (conducted by AECOM), and October 2024 (conducted by WSP). This OMR has been prepared in accordance with the *PFAS OMP Reporting Guidance* (Department of Defence 2024).

Objective

The objective of the OMR is to evaluate PFAS concentrations in samples collected within the Lavarack Barracks Management Area, as shown by the blue-hashed outline on Figure A.1 and Figure A.2, Appendix A, since the commencement of the OMP in 2020. If changes in PFAS concentrations at a monitoring location are identified, the results are further evaluated. The evaluation considers if there is a change to the understanding of the conceptual site model (CSM) or to the risk profile for sensitive human and ecological receptors. This information is used by Defence and State Government agencies to assist risk management decisions to protect human health and the environment.

Monitoring program

For this OMR, monitoring of groundwater, surface water, and sediment was completed in accordance with two Sampling and Analysis Quality Plans (SAQPs; AECOM 2023a and WSP 2024). The monitoring focused 31 PFAS compounds, with emphasis on specific PFAS compounds, namely perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), and perfluorohexane sulfonate (PFHxS). This OMR uses PFAS screening criteria, screening triggers, and associated responses described in the updated OMP to assess the data, and uses the assessment findings to confirm the updated CSM as outlined in the 2025 PMAP and existing human health and ecological risk profiles.

Data interpretation

Data collected during the OMR monitoring period were compared to the broader OMP dataset for the included groundwater, surface water, and sediment sampling locations. The Management Area is broken up into catchments based on land topography and the movement of surface water through them. The results are discussed in terms of their relationship to the source areas (where the PFAS contamination originated) within each catchment. The catchment and sources areas are presented in Figure A.2, Appendix A.

Key observations for each of the sampled environments included:

- Groundwater flow direction is to the north towards Ross River, consistent with previous observations.
- The highest PFAS concentrations in groundwater were detected near the Former Fire Station (PSC-4) and the Former Fire Training Area (PSC-6) in Catchment G. Elevated PFAS concentrations in groundwater were also measured in the Eastern PFAS Contamination Area (PSC-7, PSC-8, PSC-9, and PSC-10) and the Former B Squadron (PSC-11). PFAS concentrations in groundwater across the Management Area are consistent with most previous monitoring data, except for four wells that reported maximum concentrations during this OMR period. These wells included MW125I/S (on-base) in Catchment A and MW118 (on-base) in Catchment J/K, and MW233 (off-base) in Catchment G, where concentrations were double previous maximum concentration measured at these wells. On-base groundwater monitoring locations near potential sources areas reported PFOS, PFHxS, and PFOS+PFHxS that exceeded the human health recreational (body-contact) criteria, which is consistent with previous results. PFOS, PFHxS, and PFOS+PFHxS at some off-base groundwater monitoring locations exceeded the drinking

water criteria; however, groundwater within the Management Area is not commonly used for drinking, based on the outcomes of the previous water use survey.

- The highest PFAS concentrations in surface water were detected adjacent to the Former Fire Station in Catchment G, and downstream of the Land121 Project, the Suspected Fire Training Area, and the Former Caribou Airfield in Catchment J/K, which are up to 10 times higher than the other on-base and off-base monitoring locations. Consistent with previous results, recreational criteria exceedances occur at monitoring locations near and downstream of source areas. Similarly, drinking water and ecological criteria exceedances for PFOS and PFOS+PFHxS occur at monitoring locations within (on-base) and downstream (off-base) of the dams in Catchment G and along Gordon Creek in Catchment J/K. These exceedances are comparable to the previous exceedances reported within the Management Area.
- The highest PFAS concentrations in sediment were measured at monitoring locations associated with the source areas in Catchment J/K (on-base at SD121) and Catchment G (on-base SD109 and SD110, and off-base SD211). PFAS concentrations in sediment across the Management Area are consistent with most previous monitoring data, except for a small number of monitoring locations that reported higher concentrations than previously measured.

Conceptual site model

A CSM is a representation of the Management Area that shows the possible relationships between a contaminant source, migration and exposure pathways, and human health and ecological receptors. For this OMR reporting period, the following aspects specific to the CSM are noted:

- One PFAS source (the Land121 stockpile) has been removed since the previous OMR;
- The PFAS concentrations and extent of PFAS in on-base and off-base groundwater, surface water, and sediment throughout the Management Area are similar to previous data reported in the detailed site investigation (RPS/Wood 2019a), previous seasonal reports (RPS/Wood 2019c, 2020b) and the most recent OMR (AECOM 2023c);
- Fluctuations in concentrations as noted during the OMP at select locations do not change the overall understanding of how PFAS is moving through the environment and the potential risk to human health and ecological receptors as these aspects were previously assessed within the original CSM; and
- The inferred PFAS transport and migration mechanisms (overland flow, leaching to groundwater, and groundwater / surface water interactions) remain consistent with those previously described.

Overall, the exposure pathways described in the CSM remain unchanged, based on the data evaluated for this monitoring period, and no new exposure pathways have been identified for groundwater, surface water, or sediment.

Risk profile

The data assessment for this OMP monitoring period indicates the extent and area-specific magnitude of PFAS in groundwater, surface water, and sediment has not adversely changed compared to data collected for the OMP prior to this OMR reporting period and therefore the PFAS risk profile to human health and ecological receptors within the Management Area remains unchanged. As a result, no changes to the risk profile have been identified.

Conclusions

The data collected during the monitoring period covered within this OMR meet the objectives of the SAQPs and the overall OMP. The groundwater, surface water, and sediment monitoring locations are considered appropriate and sufficient for the program objectives. The CSM was reviewed, and no changes were identified to the sources, pathways or receptors within the Management Area. Although some locations reported higher than previous PFAS concentrations, based on the data review, no changes to the risk profile were identified and the conclusions made in the HHRA and ERA still apply. Ongoing monitoring as part of the OMP for groundwater, surface water, and sediment will continue to monitor the extent of PFAS in accordance with the SAQP and potential migration, and any associated risk changes will continue to be assessed in accordance with the PMAP and OMP.

1 Introduction

Department of Defence (Defence) engaged WSP Australia Pty Ltd (WSP) to implement the ongoing monitoring plan (OMP) for per-and poly-fluoroalkyl substances (PFAS) at the Lavarack Barracks (the base) and the Lavarack Barracks Management Area located in Townsville, Queensland, as defined in the PFAS Management Area Plan (PMAP; Department of Defence 2025a). A base locality plan is provided in Figure A.1, Appendix A and base features and primary and secondary PFAS source areas are provided in Figure A.2, Appendix A.

This Ongoing Monitoring Report (OMR) has been prepared with reference to the *National Environment Protection (Assessment of Site Contamination) Measures 1999, as amended 2013* (the 'ASC NEPM'), the Heads of EPAs Australia and New Zealand (HEPA 2025) *PFAS National Environmental Management Plan, Version 3.0* (PFAS NEMP), Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance. In addition, this report has been prepared in accordance with the PFAS OMP Reporting Guidance (Version 0) issued in February 2024 (Department of Defence 2024).

1.1 Background

This OMR was prepared to summarise the results of monitoring completed from October 2020 to October 2024 (the OMR monitoring period). Biannual sampling events have been conducted during this monitoring period and are reported in the following biannual reports, of which the last three sampling reports (August 2023, March 2024, and October 2024) are included in Appendix D:

- AECOM, 2021a, *Sampling Event Factual Report, October 2020. PFAS OMP – Lavarack Barracks, Townsville, Queensland*.
- AECOM, 2021b, *Sampling Event Factual Report, March/April 2021. PFAS Ongoing Monitoring Program – Lavarack Barracks, Townsville, Queensland*.
- AECOM, 2021c, *Sampling Event Factual Report, August 2021. PFAS Ongoing Monitoring Program – Lavarack Barracks, Townsville, Queensland*.
- AECOM, 2022, *Wet Season Sampling Factual Report, February to April 2022. PFAS OMP - Lavarack Barracks Townsville*.
- AECOM, 2023a, *Dry Season Sampling Factual Report, August to October 2022. PFAS OMP - Lavarack Barracks Townsville*.
- AECOM, 2023b, *Wet Season Sampling Factual Report, March 2023. PFAS OMP - Lavarack Barracks Townsville*.
- AECOM, 2024a, *Dry Season Sampling Factual Report, August 2023. PFAS OMP - Lavarack Barracks Townsville*.
- AECOM, 2024b, *Wet Season Sampling Event Factual Report, March 2024. PFAS OMP - Lavarack Barracks Townsville*.
- WSP, 2025, *PFAS Ongoing Monitoring Plan, Lavarack Barracks, Dry Season Sampling Event RevB - October 2024*.

These monitoring events were undertaken in accordance with the SAQPs prepared by AECOM (October 2020 to March 2024) and WSP (October 2024), which were reviewed and updated as required, prior to each monitoring event. The SAQPs were based on the previous OMP, which was presented as an attachment (Attachment 1) of the 2020 PMAP (Department of Defence 2020).

An update to the OMP (Department of Defence 2025b) was prepared following the completion of the monitoring period outlined above, which will guide future OMP monitoring events. Additionally, this OMR assesses and evaluates the data using PFAS screening criteria and screening triggers described in the revised OMP (Department of Defence 2025b). This

OMR also incorporates the updated CSM as outlined in the revised PMAP (Department of Defence 2025a) and OMP (Department of Defence 2025b).

1.2 Objectives

The OMP sets out requirements for collection of adequate data to identify and evaluate:

- Spatial, and temporal (including seasonal) variability of PFAS in the environment;
- Changes to sources, transport pathways and/or receptors, described as a CSM for the base;
- Whether risks to human and ecological receptors require review;
- The influence that risk management activities, including remediation activities, at the base, as outlined in the 2025 PMAP (Department of Defence 2025a), have had on PFAS in the environment;
- Determine if reported data trigger an action and/or review, and
- Whether the monitoring program (eg frequency/seasonality, locations, or media), based on measured data, needs to be modified.

The data collected may be used to inform where new risk management actions may be required, or to support a determination that remediation has been completed so far as reasonably practicable.

The OMR addresses each of these OMP objectives through review of groundwater, surface water, and sediment data collected over the monitoring period (August 2023 to October 2024) and in consideration of the data collected over the broader OMP monitoring period (2020 to 2024).

1.3 Scope

The scopes of work for this OMR are to assess changes to the nature and extent of select PFAS over the monitoring period and evaluate if these changes have implications for the understanding of the CSM and the risk profile with respect to PFAS impacts within the Management Area. This includes the evaluation of data reported during the current monitoring period, which are listed in reports provided in Section 1.1.

1.3.1 Major deviations from the scope

No major deviations from the scope were noted at the monitoring rounds conducted by AECOM between October 2020 and March 2024, except for minor deviations detailed in Table C.1, Appendix C, which provides a list of deviations over the broader OMP monitoring period. However, the October 2024 dry season sampling round completed by WSP included the following additional monitoring wells: MW077, MW349, MW14A, MW345, MW111B, MW112, MW019, and MW021. These monitoring wells were added to the OMP on request by Defence to enhance the post-remediation monitoring network at the base.

2 Base setting

2.1 Base location and description

The base is located in Townsville, North Queensland and covers an area of approximately 740 hectares (ha). The base consists of a working, training, and accommodation facility, which houses the Australian Army 3rd and 11th Brigades and supporting organisations. Activities carried out at the base are mainly related to Defence training activities and vehicle maintenance works. Vehicle maintenance workshops include wash-down bays, interceptor pits, and battery storage areas. The base also contains numerous workshops and bulk fuel area / oil storage and distribution facilities, including a former Mobil Service Station.

A series of connected dams are located in the central portion of the base and several creeks, which are tributaries of Ross River that flow through the base. The former Lavarack golf course and sporting fields are located along the northern boundary of the base. The base locality plan is provided in Figure A.1, Appendix A and base features are provided in Figure A.2, Appendix A.

2.2 Management Area

The PFAS Management Area includes the base and the surrounding residential suburbs of Murray, Douglas, Annandale, Idalia, Oonoonba, and Wulguru as shown on Figure A.1, Appendix A. The Management Area is divided into 'on-base' and 'off-base' areas and comprises 2,365 ha. The Management Area boundary is formed by Ross River to the north, the relevant sub-catchment boundaries to the east and west, and the southern base boundary to the south (Figure A.2, Appendix A).

2.3 Source areas

Source areas can be primary or secondary. Primary sources (referred to as Potential Sources of Contamination [PSC]) are mostly areas of PFAS contamination where aqueous film forming foam (AFFF) was used or stored, for example, a fire training area. Secondary source areas contain an accumulation of PFAS contamination in the environment, such as in soil, sediment, or surface water, which has migrated from a primary source area.

The on-base PFAS source areas that have been identified through previous investigations are presented in Table 2.1. These investigations include the detailed site investigation (DSI; RPS/Wood 2019a), the annual mass discharge assessment (WSP Golder 2023a), and soil and groundwater delineation investigations for PSC-4 (WSP Golder 2023b), and PSC-5 and PSC-6 (WSP Golder 2023c). A map showing the source areas is provided in Figure A.2, Appendix A.

The main pathway for annual discharge of PFAS from the on-base source areas at Lavarack Barracks to the off-base downstream receiving environment is surface water (ie ~93%), with groundwater discharge to the downstream environment estimated to approximate 7%. This was identified in the 2020 PMAP (Department of Defence 2020) and confirmed by an annual mass discharge assessment completed in 2023 (WSP Golder 2023a). This 2023 study also concluded that the primary source of PFAS to off-base areas via surface water drainage was Catchment G, which includes the Former Fire Station (PSC-4) and the base dams.

Table 2.1 Known source areas of PFAS, Lavarack Barracks (to 2024) (summarised from the updated PMAP; Department of Defence [2025a])

Potential Sources of Contamination (PSC)	Source Area	CSR Number	Extent of PFAS Contamination and Further Actions[1,2]
PSC-1	Soil Stockpile Area	CSR_QLD_000534	Low concentrations of PFAS in soil, groundwater and surface water. Further sampling required to characterise soil for ongoing training use.
PSC-2	Suspected AFFF Disposal Area	CSR_QLD_000535	Low concentrations of PFAS in soil, groundwater and surface water. No further action required.
PSC-3	Former Helicopter Squadron 2CAV Buried OCP Waste Material	CSR_QLD_000488 CSR_QLD_000055	Low concentrations of PFAS in soil, groundwater and surface water. Possible contribution of PFAS to top dam.
PSC-4	Former Fire Station	CSR_QLD_000536	PFAS present in concrete and soil associated with the former Fire Station, estimated mass of PFAS was 55.6 kg. Migration via groundwater and surface water to lower dam, then off-base. Remediation Action Plan prepared. Further assessment under the dental building to be undertaken in the future if land use changes. Remediation to be undertaken in 2025.
PSC-5	Monocell	CSR_QLD_000315	Delineation of soil and groundwater, with assessment of interactions with surface water, indicates no detectable PFAS. Water within the Monocell had low concentrations of PFAS. Surface water and groundwater flow direction toward Catchment G (north-west), with negligible contribution to Catchment J (north-east) and associated off-base receptors. The Monocell is not considered to be an ongoing source of PFAS that requires active management. No remediation action is required for the Monocell.
PSC-6	Former Fire Training Area	CSR_QLD_000313	Delineation of soil and groundwater indicates limited soil PFAS mass associated with one of the burn-pits.

Potential Sources of Contamination (PSC)	Source Area	CSR Number	Extent of PFAS Contamination and Further Actions[1,2]
			Surface water and groundwater flow direction toward Catchment G (north-west), with negligible contribution to Catchment J (north-east) and associated off-base receptors. Investigation limited to one of the two burn-pit areas due to Defence infrastructure; however, based on principles of remediation SFARP and incomplete PFAS mass migration, no remediation of the former Fire Training Area is warranted at this time. Ongoing monitoring required and additional investigation under Defence infrastructure in the future land use changes.
PSC-7	Land121 Project	CSR_QLD_000538	The Land121 area was excavated as part of base development and the excess soil was placed in a high-density polyethylene lined and covered stockpile. The remediation of the Land121 stockpile containing PFAS by off-site disposal was completed in 2024. A validation sampling program was completed in 2025, confirming the removal of the stockpile of soils containing PFAS. No further investigation or action required.
PSC-8	Former Helicopter Landing Area (Building 750)		Low concentrations of PFAS in soil, groundwater and surface water. No further action required.
PSC-9	Suspected Fire Training Area		Low concentrations of PFAS in soil, groundwater and surface water. No further action required.
PSC-10	Former Caribou Airfield		Low concentrations of PFAS in soil, groundwater and surface water. No further action required.
PSC-11	Former B Squadron	CSR_QLD_000540	Low concentrations of PFAS in soil, groundwater and surface water. No further action required.
PSC-12	Stockpile Designated Area 2	CSR_QLD_000314	Low concentrations of PFAS in soil, groundwater and surface water. No further action required.

Potential Sources of Contamination (PSC)	Source Area	CSR Number	Extent of PFAS Contamination and Further Actions[1,2]
			Assessment to identify sources within Catchment K, which are contributing to Surface Water PFAS mass Ongoing investigation of Bulk Fuel Facility, Wash-down Bays, and Petroleum Platoon.
Secondary	Lavarack Golf Course Sporting Fields	CSR_QLD_000537	Potential secondary source of PFAS due to irrigation practices at the base. Irrigation has ceased. Low concentrations of PFAS in groundwater and surface water. No further action required.
Secondary	On-base Dams (Top, Middle, and Lower)	CSR_QLD_000539	Secondary source of PFAS due to discharge either via groundwater or surface water from primary source areas within Catchment G. Low concentrations of PFAS in groundwater and surface water. No further action required.

[1] – Sources of extent of PFAS contamination at Lavarack Base include RPS/Wood (2019a), Department of Defence (2025a), WSP Golder (2023a); WSP Golder (2023b); WSP Golder (2023c).

[2] – The actions, where provided, are subject to review and update as applicable (eg as part of the planned base-wide data evaluation).

PSC = potential source area; AFFF = aqueous film forming foam; SFARP = so far as reasonably practical; OCP = organochlorine pesticides.

The timing for the proposed actions will be risk-based.

2.4 Site setting

2.4.1 Topography and geology

The topography of the Management Area is characterised by a hillslope profile descending from the Mount Stuart massif to the south towards the Ross River floodplain terraces. The Management Area is characterised by coastal floodplain sediments (in the northern Management Area) and colluvial hillslope soils (in the southern Management Area) over igneous granitic bedrock. The underlying bedrock consists predominantly of Carboniferous volcanics and Permian intrusions (RPS/Wood 2019a).

2.4.2 Hydrology and hydrogeology

The base is located at the foot of Mount Stuart with regional topography influencing ground and surface water flows in a northerly and north-easterly direction towards Ross River. A dam is located in the central portion of the base, which is divided into three sections namely the top and middle / lower dams, and several creeks, which are tributaries of Ross River, flow through the base (Figure A.2, Appendix A).

The intensity of the pronounced wet season has a substantial bearing on the shallow geology and hydrogeology as well as the surface water and groundwater flow regimes across the Management Area. Many of the water courses (and drains) that flow through the on-base and off-base areas are ephemeral, with little to no water (ponded or flowing) present during the dry season. During the wet season, shallow groundwater may also potentially come to the surface and discharge into creeks and drains (eg drainage swales in Catchment K [WSP Golder 2025]). For the purposes of this OMP, surface water is limited to flowing streams or drains in the wet season and permanent waterbodies during the wet and dry seasons) in the on-base and off-base areas (eg Lavarack Dams, lakes in the suburb of Idalia) and Ross River.

Two different aquifers (shallow and deep) were identified within the Management Area. The shallow aquifer is present within the unconsolidated quaternary age sediments (alluvium and colluvium), and the deeper aquifer is present within the bedrock (conglomerate and granite) (RPS/Wood 2019a). Shallow groundwater present within the alluvial sediments of the Ross River floodplain is likely recharged by the network of inflowing freshwater tributaries, direct infiltration from rainfall in the catchment, and baseflow from rainfall on the surrounding granitic outcrop and associated colluvium.

The groundwater flow direction within the shallow aquifer has consistently been inferred to be to the north towards the Ross River.

A groundwater bore search (https://qldglobe.information.qld.gov.au/) was conducted in February 2025 for the Management Area and 112 registered existing groundwater bores were identified. These bores are registered for domestic (47), irrigation (3), monitoring (36), lake top up (1), and unknown (25) purposes.

2.4.3 Surface water catchments

The nearest major surface water course to the base is Ross River, which is the main receiving water for surface waters originating from the base. Ross River is used for recreational activities such as boating and fishing.

On-base surface water represented by waterbodies and watercourses is located within a number of drainage catchments, with the main surface water features being the top and middle / lower dams. Surface water from the lower dam and six drainage channels on the base connect to a series of off-base drainage channels, which ultimately discharge to the estuarine reaches of the Ross River, downstream of Aplin's Weir. The surface water PFAS migration pathway is also sub-divided into catchments based on the natural surface water flow to enable an understanding of the source areas that may be contributing to the PFAS mass in each catchment at the northern (downstream) boundary of the base. Three main water catchments (west, central, and east) and associated sub-catchments (Catchment A, Catchment G, and Catchment J/K/L) currently identified at the base are presented in Figure A.2, Appendix A.

2.4.4 Regional climate

The base and the Management Area are located within the dry tropics of Queensland. Townsville's climate is dominated by wet season (November to April) and dry season (May to October) conditions. The wet season is typically hot and humid, with a long-term maximum average temperature of 30.9 degrees Celsius (°C) and a minimum average temperature of 23.2°C (BoM 2024). Dry seasons are characterised as warm with a long-term maximum average temperature of 27°C and a minimum average temperature of 16.5°C (BoM 2024).

Townsville's average yearly rainfall is 1,129.4 mm with contrasting wet and dry season averages (wet season: 1,012.5 mm [89.6%]; dry season average: 119.3 mm [10.4%]), which falls on a total of 65 days per year (BoM 2024). A graphic representation of monthly rainfall data over the broader OMP monitoring period for Townsville (BoM Station 032040) recorded by the Bureau of Meteorology is presented in Figure 2.1. Monthly rainfall follows the projected pattern for the region with no significant events noted during the monitoring period.

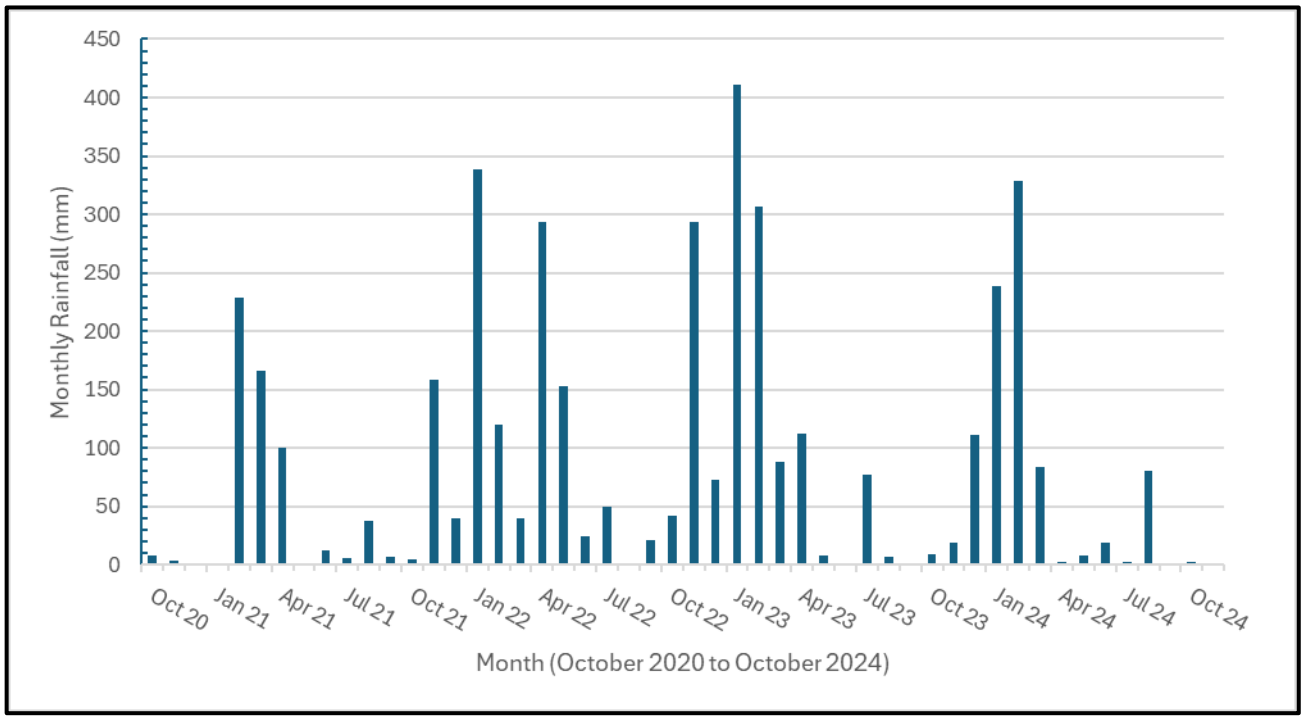

Figure 2.1 Monthly rainfall data (mm) from the monitoring period for Townsville Area (station 032040), October 2020 to October 2024.

2.4.5 Vegetation

Most of the vegetation on the base has been altered or removed, leaving only a small amount of natural, riparian, and wetland vegetation. Similarly, much of the surrounding off-base area has been cleared to make way for residential neighbourhoods, sports fields, and open spaces. Natural vegetation is largely restricted to drainage channels and the Ross River.

2.4.6 Surrounding land and water uses

The off-base area to the north of the base mainly consists of low-density residential properties. In addition, schools, public recreational areas, commercial and light industrial properties are also located within the Management Area. Townsville Hospital and James Cook University are located west of the base.

A desktop review of maps and aerial photographs of the Townsville area was undertaken during the DSI (RPS/Wood 2019a) to identify other activities outside of the base that may have the potential from use of AFFF or be subject to alternate PFAS sources (eg landfills, which may possess PFAS-containing waste material, lubricant oils and hydraulic fluids, and other consumer products) which contribute PFAS contamination within the broader regional area. The

following industrial facilities and waste facilities are located outside the Management Area, but within approximately 6 km of the Management Area:

- Light industrial and commercial land-use to the north and east of the Management Area;
- A sewage treatment plant located on Abbot Street, Idalia, approximately 1.8 km to the north-east of the base, within the Management Area;
- The Condon Water Purification Plant (Water Treatment Facility) (5 km west of the base), Mount St John Wastewater Treatment Facility (6km north of the base) and Cleveland Bay Purification Plant (2.7 km east of the base). These infrastructure facilities are located greater than 3 km from the base and outside of the Management Area;
- Cleanaway (Waste Management) – located approximately 4.5 km north-northwest of Management Area;
- Townsville City Council Landfill (Landfill) – located approximately 1.9 km west of base boundary; and
- Stuart Landfill (Landfill) – located approximately 4.9 km southeast of base boundary.

The DSI (RPS/Wood 2019a) reported that these potential non-Defence sources of PFAS are unlikely to directly affect receptors within the Management Area. However, they could serve as direct incremental sources of PFAS contamination in the broader Ross River catchment, upstream of the Management Area. In this region, background PFAS concentrations may contribute to impacts to the wider environment and to its accumulation in the food chain.

3 Other aspects

Defence bases are dynamic in their operation, which includes ongoing infrastructure upgrades and re-development activities. With legacy PFAS contamination recognised at the base, these activities, which are conducted under the oversight of management and development plans and corresponding monitoring programs, provide information that furthers the understanding of the extent of contamination at the bases and the key pathways to off-base migration and risk. For Lavarack Barracks, some of the specific activities include remediation works across the base and at select legacy sites and Defence infrastructure projects (eg civil works, remediation projects). Project works under the PMAP and base Infrastructure that have been completed or are scheduled to be undertaken are described below. These works are considered as part of the OMP implementation and/or interpretation of the sampling event monitoring data.

3.1 Remediation projects

PMAP delivery works commenced at the base are provided in Table 3.1:

Table 3.1 PMAP project works

Area of the Base	Works Completed	Scheduled Works	Consideration for OMP
Former Fire Station (PSC-4)	Investigation Development of RAP	Remediation in dry season 2025.	Post-remediation monitoring to be incorporated into the OMP, and replacement wells to be installed. Changes in OMP monitoring data because of remediation works.
Whole of base	Mass Discharge Assessment (baseline)	Implementation of mass discharge assessment for two wet seasons post remediation.	Results from the Mass Discharge assessment to be considered in the interpretation of OMP.
Land121 Stockpile	Off-site disposal of PFAS contaminated stockpiled soils in June/July 2024 Validation Sampling of stockpile footprint in February 2025	No further works scheduled.	Results of OMP monitoring in Catchment K to be considered based on Land121 stockpile removal.

3.2 Infrastructure and development works (on-base and off-base)

On-base Defence infrastructure projects (eg civil works) and off-base development projects (not Defence related) currently underway or completed within the monitoring period are summarised in Table 3.2.

Table 3.2 Infrastructure project works

Name of Project / Event	Descriptions
On-base	
Land121 Stockpile	Removal of approximately 31,000 m^3 of PFAS contaminated soil previously located adjacent to the Petroleum Platoon. Commenced in June 2024 and completed by the end of July 2024.

Name of Project / Event	Descriptions
Land 400 Stage 1 - Armoured Fighting Vehicle Facilities program (AFVFP)	Earthworks included excavation and temporary stockpiling of soil south of the Former B Squadron. Works completed by December 2023.
Eastern end of the base near the Lavarack Close Training Area (LCTA) in March 2024 – soil stockpiling (EST08536 - Lavarack Barracks - Road Refurbishments)	Works completed by the end of November 2024. Soil stockpiled on-base and then reused at multiple locations on-base. 1 RAR Carpark – a large proportion of spoil was used for this carpark as part of this project.
Off-base	
The Townsville Connection Road upgrade	The Townsville Connection Road is being upgraded to dual lanes between University Road and Bowen Road Bridge. The upgrade will include movement of PFAS contaminated soil previously located within the construction zone. Construction started on 4 December 2023 with completion expected in 2025.

3.3 Water and land use changes as provided by landowners

A water use survey was conducted throughout the off-base region of the Management Area prior to commencement of the DSI (RPS/Wood 2019a). No additional water use surveys were conducted during the monitoring period.

4 PFAS screening criteria

Human health and ecological investigation levels (HILs and EILs, respectively) for perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), and perfluorohexane sulfonate (PFHxS) were derived in the PFAS NEMP 3.0 using methods consistent with assumptions set out in the ASC NEPM. The criteria adopted for this report are outlined in Table 4.1. Only groundwater and surface water data are compared to the adopted criteria.

Table 4.1 PFAS screening criteria

Pathway	Compound[1]	Criteria	Comments
Human Health Receptors			
Drinking water	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP 3.0 Off-base groundwater and surface water data will be compared to these criteria.
	PFOA	0.56 µg/L	
Recreational use	PFOS + PFHxS	2 µg/L	The values are from the PFAS NEMP 3.0 On-base and off-base surface water and groundwater data will be compared to these criteria.
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater and marine water (95% species protection values)	PFOS	0.13 µg/L	The values are from the PFAS NEMP 3.0 Off-base surface water data and on-base dams data will be compared to these criteria.
	PFOA	220 µg/L	

[1] - Per PFAS NEMP 3.0 (HEPA 2025), where the guideline values refer to the sum of PFOS and PFHxS, this includes PFOS only, PFHxS only, and the sum of the two.

As presented in Table 4.1, the adopted criteria will not be applied to all collected groundwater and surface water data. Instead, the criteria are now applicable to specific monitoring locations within the on-base and off-base monitoring area depending on the primary exposure pathway in those areas. For example, groundwater and surface water quality PFAS concentrations within the on-base and off base areas will be compared to recreational use guidelines. This is because the risk profile for on-base areas is limited to the potential for body contact and exposure of groundwater and surface water; the primary pathway is contact and exposure to workers from incidental surface water/groundwater exposure during irrigation, during construction and excavation activities, or recreation activities. However, application of drinking water criteria will be limited to off-base groundwater and surface water data because of the potential to use groundwater as a secondary drinking water supply or irrigation of home-grown produce (there is no potable or irrigation use of on-base groundwater or surface water, including the on-base dams, or cultivation of produce for consumption). Application of ecological criteria are limited to the on-base dams and off-base surface waters due to aquatic habitat associated with the on-base dams and off-base surface watercourses that possess fish and other water-borne biota, including aquatic birds that visit the dams (and because aquatic life has been shown to bioaccumulate PFAS).

Therefore, the major differences in adopted criteria between the previous and updated OMPs are:

- Previously, only surface water results from SW245 were compared to the drinking water criteria; for this OMR monitoring period all off-base surface water data are compared to the adopted drinking water criteria; and
- Previously, all surface water and groundwater results were compared to the freshwater and marine water (95% species protection) ecological criteria; for this OMR reporting period, only off-base surface water data and on-base dam data are compared to the adopted ecological criteria.

It is noted that at the time this report was prepared, no criteria were specified for PFAS in sediments in PFAS NEMP 3.0. However, guideline criteria will be reviewed annually and updated based on the HEPA endorsed criteria at the time.

In October 2024, the NHRMC released draft health-based drinking water guidelines for public consultation (NHMRC 2024). Defence is considering how the draft guidelines, if adopted, may affect its PFAS Investigation and Management Program, and communities surrounding the Defence Estate. An initial step is the adoption of a lower laboratory limit of reporting at select locations during the next sampling event to understand any future implications. Until the revised PFAS guidelines are finalised and published, the current guideline values remain in effect.

5 Sampling and analysis methodology

5.1 Methods

The methods used, and quality of fieldwork performed, during the OMP sampling events during the OMR monitoring period were consistent with sampling procedures outlined in the ASC NEPM and PFAS NEMP 3.0. Fieldwork was also completed in general accordance with the SAQPs prepared before each sampling event (refer to Appendix C). SAQPs describe the field investigation methods for the collection of samples for PFAS analyses and the specific investigation protocols required for the collection of field data and samples from groundwater, surface water, and sediment. As a result, there is confidence in the quality of the environmental data collected during the sampling events.

5.2 Deviations from SAQP requirements

Deviations from the SAQPs during each sampling events during the monitoring period are summarised in Appendix C. These deviations were determined to have negligible to minor effects to the OMP dataset and objectives.

5.3 Changes to the monitoring network

Monitoring events from October 2020 to March 2024 were undertaken based on the OMP provided in the PMAP (Department of Defence 2020). No changes to the monitoring network were noted during this period except for the exclusion of MW117S and MW117D due to their damage by construction works.

A revision of the OMP (Department of Defence 2025b) was used for the preparation of the SAQP for the October 2024 sampling event. This revision included the addition of seven monitoring wells being sampled during the October 2024 sampling event compared to the previous OMP sampling events (ie MW019, MW021, MW112, MW345, MW014A, MW077, and MW349). These additional wells were included in the monitoring to provide data to support the current remediation efforts. These supplemental monitoring wells were included to provide data that will be used to inform the effectiveness of remediation.

6 Quality assurance and quality control

Data validation pertaining to the data in this report has been previously completed and discussed within the individual sampling event reports (formerly referred to as factual reports) listed in Section 1.1.

Data validation procedures employed in the assessment of the field and laboratory quality assurance/quality control (QA/QC) data for the sampling event reports and interpretative reports indicated that the reported analytical results were representative of the sample locations, and that the overall quality of the analytical data produced is acceptably reliable for their purpose.

7 Results

The primary focus of the OMR is on the biannual sampling undertaken between August 2023 and October 2024, which constitutes the OMR monitoring period. However, there were six previous biannual OMP sampling events conducted between October 2020 and March 2023. The nine sampling events in total comprise the broader OMP monitoring period. The biannual sampling events are as follows:

- Dry season sampling event in October 2020 (AECOM 2021a)
- Wet season sampling event in March/April 2021 (AECOM 2021b)
- Dry season sampling event in August 2021 (AECOM 2021c)
- Wet season sampling event in February – April 2022 (AECOM 2022)
- Dry season sampling event in August – October 2022 (AECOM 2023a)
- Wet season sampling event in March 2023 (AECOM 2023b)
- Dry season sampling event in August 2023 (AECOM 2024a)
- Wet season sampling event in March 2024 (AECOM 2024b)
- Dry season sampling event in October 2024 (WSP 2025)

The sampling events listed above were timed to coincide with the end of dry season and end of wet season. Groundwater and surface water monitoring locations are illustrated in Figures A.3 and A,4, Appendix A, respectively. The results are presented in Tables B.1 to B.8, Appendix B and summarised in Figures A.5 to A.13, Appendix A. The sampling event reports for the last three sampling events are provided in Appendix D.

7.1 Groundwater

7.1.1 Groundwater elevation and flow direction

Static water level was measured at all sampled groundwater monitoring wells during each monitoring round to evaluate the groundwater elevation (reduced water level) and assist with determining the groundwater flow direction within the Management Area. A summary of groundwater elevation measured across nine monitoring events is presented in Table 7.1.

Table 7.1 Summary of groundwater elevations measured in the Management Area

Gauging Event	No. Wells	SWL (m BTOC)		RWL (m AHD)	
		Min	Max	Min	Max
October 2020	40	0.565	5.964	0.603	23.306
March/April 2021	40	0.491	5.564	1.232	26.012
August 2021	40	0.600	5.905	0.495	24.743
February/April 2022	39	0.561	5.373	1.027	25.705
August/October 2022	38	0.465	5.824	0.576	25.507
March 2023	38	0.270	5.125	1.275	25.434
August 2023	38	0.632	5.925	0.475	25.380
March 2024	38	0.285	4.982	1.467	26.648
October 2024	43	0.492	5.630	0.990	24.970

Notes: SWL = static water level, RWL = reduced water level, m BTOC = metres below top of casing, m AHD = metres above the Australian height datum.

The groundwater flow direction within the shallow aquifer is inferred to be to the north towards Ross River. Figure A.5, Appendix B, shows the inferred flow direction from the latest sampling round in October 2024, which is consistent with previous sampling events. Groundwater flow direction was implied from water level measurements from monitoring wells determined to not being tidally influenced.

7.1.2 Physico-chemical groundwater quality

The summary of event specific physico-chemical groundwater quality conditions encountered during the monitoring period is presented in Table 7.2. Physico-chemical groundwater field measurements for each monitoring location and each sampling event are presented in Table B.1, Appendix B.

Table 7.2 Physico-chemical groundwater quality

Sampling Event	DO (mg/L)		EC[1] (µS/cm)		pH		Corr ORP[2] (mV)		Temp (°C)	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
October 2020	1.44	7.93	7	51,290	5.50	7.61	132.7	312.5	26.2	31.0
March/April 2021	0.09	7.26	516	42,007	6.08	10.29[4]	55.8	400.1	26.2	33.9
August 2021	0.42	5.3	481	37,926	6.19	7.99	32.5	429.6	22.3	28.7
February/April 2022	0.01	7.29	79.3	51,132	5.88	7.96	5.8	422.6	27.6	37
August/October 2022	0.30	18.2[3]	250.5	42,048	5.68	7.91	46.6	380	21.5	28.2
March 2023	0.51	6.22	5	35,058	6.24	8.09	58.5	418.8	27.0	32.7
August 2023	0.42	3.34	783	29,788	6.06	7.52	31.1	406.1	24.6	31.4
March 2024	0.40	5.79	197.9	41,687	6.25	7.51	198.7	288.7	27.6	32.8
October 2024	0.26	16.4[3]	436	39,004	5.53	8.29	-289.8	291.1	23.3	31.9

[1] - Some EC values for October 2020 and March 2023 seem uncharacteristically low for groundwater. These anomalous results could be due to a measurement error in the field.

[2] - Per YSI Environmental (YSI 2005), the corrected redox potential (as mV) was determined by adding a factor to the oxidation-reduction potential (ORP) field measurement from the YSI 6-series sondes (ie corrected redox potential [mV] = YSI ORP + 200). The equation stated above converts the field ORP measurement from the YSI ORP probe to give the redox potential that would be obtained using a standard hydrogen electrode for the same measurement, assuming a field temperature of 22ºC.

[3] - The DO for August/October 2022 and October 2024 are unusual and uncharacteristically high for groundwater based on the range of measured temperatures and EC. This anomalous result could be due to a measurement error in the field.

[4] - The pH for March/April 2021 is uncharacteristically high for groundwater. This anomalous result could be due to a measurement error in the field.

mg/L = milligrams per litre, µS/cm = microsiemens per centimetre, mV = millivolt, ºC = degrees Celsius, DO = Dissolved Oxygen, EC = Electrical Conductivity, Corr RP = Corrected Redox Potential.

Field-measured EC ranged in groundwater well samples within the Management Area between 5 µS/cm (see Note 1 in Table 7.2 above) and 51,290 µS/cm, thus representing freshwater to marine waters. The highest EC readings were measured in off-base groundwater monitoring locations that are influenced by marine waters, although high EC readings (>10,000 µS/cm) were also occasionally recorded at the on-base groundwater monitoring locations. Corrected redox potential measurements ranged between -289.8 mV and 429.6 mV indicating reducing to oxidising conditions. Field-measured pH ranged from 5.50 to 10.29, indicating acidic to alkaline conditions. DO measurements were recorded between 0.01 mg/L and 18.2 mg/L (noting this maximum measured DO is above an expected upper bound concentration of approximately 10 mg/L, which reflects saturated DO for the range of temperatures and EC for this monitoring event). Most of the DO readings were below 2 mg/L, indicating anaerobic groundwater.

7.1.3 Groundwater analytical results

PFAS have been recorded at concentrations above the laboratory limits of reporting (LORs) in all on-base and off-base groundwater samples collected during the monitoring period (Table B.2, Appendix B). The highest PFAS concentrations were consistently detected in on-base groundwater samples collected from the vicinity of the Former Fire Station (PSC-4) and the Monocell (PSC-5) / Former Fire Training Area (PSC-6). PFAS concentrations at these wells were one to two orders of magnitude higher than the rest of the on-base and off base monitoring wells. It is noted, however, that the Monocell (PSC-5) is not considered to be an ongoing source of PFAS that requires active management (see Table 2.1) and that elevated PFAS measured in monitoring wells associated with this PSC reflect northern migration of PFAS from the Former Fire Training Area (PSC-6). Elevated PFAS concentrations were also measured in groundwater samples from the Eastern PFAS Contamination Area (representing Land121 Project, PSC-7; Former Helicopter Landing Area, PSC-8; Suspected Fire Training Area, PSC-9; and Former Caribou Airfield, PSC-10) and the Former B Squadron (PSC-11).

Adopted recreational water criteria for PFOS and PFOS + PFHxS were only exceeded in on-base groundwater monitoring well locations; adopted recreational water criterion for PFOA was exceeded at the Former Fire Station (MW128) and the Former Fire Training Area (MW131). Except for MW205S and MW212, the drinking water criterion for PFOS and PFOS + PFHxS was exceeded at all off-base monitoring well locations on at least one sampling event during the broader OMP monitoring period.

The comprehensive list of groundwater analytical results for PFAS compounds for each monitoring location for each of the sampling events, highlighting respective adopted guideline criteria exceedances, is presented in Table B.2, Appendix B. Groundwater monitoring well locations are provided on Figure A.3, Appendix A and distribution of PFOS + PFHxS and PFOA concentrations from the 2024 dry season sampling event are presented on Figures A.6 and A.7, Appendix A, respectively.

7.2 Surface water

7.2.1 Physico-chemical surface water quality

Physico-chemical water quality parameters of surface water were collected during sampling at every location. Surface water conditions encountered during the monitoring period are summarised in Table 7.3 and field measured physico-chemical field data are presented in Table B.3, Appendix B.

Table 7.3 Physico-chemical surface water quality

Season	DO (mg/L)		EC[1] (µS/cm)		pH		Corr ORP[2] (mV)		Temp (°C)	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
October 2020	1.92	13.35	186.9	64,101	6.53	8.63	142.9	256.0	26.6	34.7
March/April 2021	2.72	11.81	138	38,099	6.79	9.92	204.1	580.5	22.9	36.0
August 2021	0.31	12.31	252	48,932	6.42	9.15	148.0	422.1	21.3	25.4
February/April 2022	0.92	11.71	39	49,925	6.67	8.91	187.1	392.0	23.4	37.3
August/October 2022	1.87	12.66	191	43,042	6.90	8.58	151.5	328.4	15.1	26.9
March 2023	2.14	9.35	3.1	10,695	6.42	8.88	186.9	421.3	26.6	32.6
August 2023	2.54	10.23	207	33,531	6.85	8.67	243.8	445.4	19.1	28.6
March 2024	1.35	8.19	27.6	10,093	6.53	9.51	256.9	1,020[3]	27.0	38.3
October 2024	0.00	6.26	215	49,026	6.47	8.76	43.4	323.6	23.2	33.3

[1] - Some EC values for March 2023 seem uncharacteristically low for surface water. These anomalous results could be due to a measurement error in the field.

[2] - Per YSI Environmental (YSI; 2005), the corrected redox potential (as mV) was determined by adding a factor to the oxidation-reduction potential (ORP) field measurement from the YSI 6-series sondes (ie corrected redox potential [mV] = YSI ORP + 200). The equation stated above converts the field ORP measurement from the YSI ORP probe to give the redox potential that would be obtained using a standard hydrogen electrode for the same measurement, assuming a field temperature of 22ºC.

[3] - The ORP March 2024 is uncharacteristically high for surface waters under natural conditions. This anomalous result could be due to a measurement error in the field.

mg/L = milligrams per litre, µS/cm = microsiemens per centimetre, mV = millivolt, ºC = degrees Celsius, DO = Dissolved Oxygen, EC = Electrical Conductivity, Corr RP = Corrected Redox Potential

Field-measured EC in surface water across the Management Area ranged between 3 µS/cm (see Note 1 in Table 7.3 above) and 64,101 µS/cm during the OMP monitoring period indicating fresh water to saline waters. The higher surface water EC measurements were collected from monitoring locations associated with tidal influences. Corrected redox potential measurements ranged between 43.4 mV and 1,020 mV indicating a range of reducing to oxidising conditions. Field-measured pH ranged from 6.42 to 9.92, indicating circumneutral to alkaline conditions. DO measurements ranged from 0 to 13.35 mg/L, indicating anaerobic to aerobic surface water.

7.2.2 Surface water analytical results

PFAS were measured at concentrations above the laboratory LORs at the surface water monitoring locations, except SW126, SW134, SW227, and SW244.

Adopted recreational water criteria for PFOS and PFOS + PFHxS were exceeded at various on-base locations and only two off-base surface water locations (SW203 and SW220) during the broader OMP monitoring period; the adopted recreational water criterion for PFOA was exceeded once at the Former Fire Station (SW109) in May 2022. Surface water collected from eight off-base locations exceeded the adopted drinking water guidelines during at least one sampling event. Concentrations of PFOS exceeded the freshwater and marine water 95% species protection value at the three on-base dam locations (SW139, SW140, and SW144) and four off-base locations (SW203, SW220, SW233, and SW242).

Surface water sampling locations are provided on Figure A.4, Appendix A. A summary of the surface water analytical results is presented in Table B.4, Appendix B and the distribution of PFOS + PFHxS and PFOA concentrations from the 2024 dry season sampling event are presented on Figures A.8 and A.9, Appendix A, respectively.

7.3 Sediment

7.3.1 Sediment analytical results

PFAS were recorded at concentrations above the laboratory LORs in each of the sediment monitoring locations during each sampling event over the broader OMP monitoring period, except for the upstream reference locations located in the Ross River (SD244 and SD245).

Sediment sampling locations are provided on Figure A.4, Appendix A. A summary of the sediment analytical results is presented in Table B.5, Appendix B and the distribution of PFOS + PFHxS and PFOA concentrations from the 2024 dry season sampling event are presented on Figures A.10 and A.11, Appendix A, respectively.

8 Interpretation and discussion

8.1 Hydrogeology

The physical groundwater conditions during the dry season and wet season sampling events since 2020 are summarised in Section 7.1.1. These conditions are described by measuring the standing water levels from the top of the well casing (m BTOC) at each of the shallow monitoring wells survey during the sampling events to determine the groundwater elevations [metres above the Australian Height Datum (m AHD)]. Two different aquifers are represented within the Management Area: a shallow aquifer and a deeper aquifer. The shallow monitoring wells typically had well depths less than 10 m and the deeper monitoring wells typically had well depths greater than 10 m.

As well as providing an indication of groundwater elevations during each seasonal survey, data from the monitoring wells determined to not being tidally influenced have been used to infer a groundwater elevation gradient in the Management Area, which provides an indication of groundwater flow direction from the base to off-base areas and thus a potential migration route for PFAS in groundwater flowing from the base. Surface water level data collected to April 2023 are presented in the previous OMR (AECOM 2023c), with surface water level data collected in August 2023, March 2024, and October 2024 presented in the resulting SERs (AECOM 2024a, 2024b; WSP 2025, respectively). The inferred groundwater flow directions during each of the surveys based on the groundwater elevation data are presented in the previously referenced documents; however, the groundwater elevation and inferred groundwater flow direction for the October 2024 sampling event is replicated in Figure A.5. The inferred groundwater flow direction within the shallow aquifer in the Management Area during the monitoring period was consistent each year, indicating a northerly flow towards Ross River. The inferred flow is also consistent with monitoring events that preceded 2020 (RPS/Wood 2019b and 2020b).

Over the broader monitoring period, the groundwater monitoring locations showed a cycle of decreasing groundwater elevations between the post wet and post dry season sampling events and increasing groundwater elevations between the post dry season and post wet season sampling events in response to the wet season rainfall. Higher magnitude groundwater elevations coincided with more pronounced wet season rainfall volumes (eg March/April 2021, March 2023, and April 2024).

8.2 Groundwater results

The groundwater analytical results for PFAS compounds for each monitoring location for the duration of the broader OMP monitoring period, highlighting respective guideline criteria exceedances, are presented in Table B.2, Appendix B. The extent and magnitude of PFAS concentrations in the on-base area, and in the proximity of known source areas (PSC), and in the downgradient off-base area, were consistent during the OMR monitoring period (August 2023 to October 2024). They were also consistent with previous (historical) results undertaken since the DSI (RPS/Wood 2019c 2020b) and during the broader OMP monitoring period. The highest PFAS concentrations in groundwater during the monitoring period were detected in the on-base area adjacent to the Former Fire Station (PSC-4) in Catchment G and downgradient of the Former Fire Training Area (PSC-6), which lies across the G, H, and J Catchments. Maximum concentrations of PFAS during the overall OMP monitoring period at these locations were as follows:

- Former Fire Station (PSC-4):
  - 32.7 µg/L PFOA (MW128, 24 Aug 2023); 876 µg/L PFOS (MW128, 31 Mar 2021); 1,300 µg/L PFOS + PFHxS (MW128, 31 Mar 2021); and 1,620 µg/L Sum of PFAS (MW128, 31 Mar 2021).
- Former Fire Training Area (PSC-6):
  - 20.7 µg/L PFOA (MW131, 26 Aug 2022); 170 µg/L PFOS (MW072, 2 Mar 2021); 403 µg/L PFOS + PFHxS (MW131, 26 Aug 2022); and 656 µg/L Sum of PFAS (MW131, 26 Aug 2022).

For the OMR monitoring period, there were no first-time detections of PFOS, PFOA, or PFOS + PFHxS, except for PFOA being detected for the first time at MW125I (0.02 µg/L) in the October 2024 sampling event.

Within the OMR monitoring period, measured PFAS concentrations in several groundwater monitoring locations exceeded previous maximum concentrations, which are listed in Table 8.1. For each location identified with a new maximum concentration, the concentration was less than two times the previous maximum concentration, except for MW125I/S (October 2024), MW118 (August 2023), and MW233 (August 2023), where the maximum concentrations were three to five times, three to seven times, and four to six times the previous maximum concentrations, respectively. The relative increases from a monitoring location context were notable, with the MW125I/S monitoring wells with PFHxS and PFOS + PFHxS increasing to ~1 µg/L and 4 µg/L, respectively for MW125I and MW125S; however, the maximum concentrations for MW118 and MW233 did not exceed 0.11 µg/L and 0.12 µg/L, respectively.

Table 8.1 Groundwater monitoring locations with concentrations exceeding historical range in the October 2023 to October 2024 monitoring period

Monitoring Catchment	On-base Monitoring Locations	Off-base Monitoring locations
Catchment A (West)	October 2024 - MW125I (PFOA, PFHxS, PFOS + PFHxS); MW125S (PFOA, PFOS, PFHxS, PFOS + PFHxS)	-
Catchment G (Central)	August 2023 - MW105 (PFOS, PFHxS, PFOS + PFHxS); MW121 (PFOS); MW128 (PFOA) October 2024 - MW105 (PFOA); MW121 (PFHxS, PFOS + PFHxS); MW124 (PFOS, PFOS + PFHxS); MW349 (PFOA)	August 2023 - MW233 (PFOS, PFHxS, PFOS + PFHxS)
Catchment J/K (East)	August 2023 - MW106 (PFOS, PFOS + PFHxS); MW114 (PFOA); MW118 (PFOS, PFOS + PFHxS); MW119 (PFOA, PFOS, PFOS + PFHxS) March 2024 - MW116 (PFHxS, PFOS + PFHxS); MW135 (PFOS)	-

Historical maximum concentrations for well locations were reported during each of the sampling events within this OMR monitoring period, representing dry and wet conditions. For the western Catchment A, both shallow and deep groundwater samples at MW125I/S reported their highest PFAS concentrations during the OMR monitoring period by a factor of three to five times the maximum concentration prior to this OMR period (ie PFOA, PFHxS, and PFOS + PFHxS). PFAS at these monitoring locations has been increasing in recent sampling events, with maximum measured concentrations reported following the last three sampling rounds. The source of the elevated PFAS in these wells (base or off-base origin) is uncertain at this time (ie there are no identified on-base or off-base PFAS contamination source areas upgradient of these wells). Anecdotal information from base stakeholders has indicated that past fire-risk management practices may have included the use and storage of AFFF in areas around the base beyond those identified specifically as PSCs. Occurrences of PFAS at the base boundary where there are no identified upgradient source areas may reflect these residual non-specific sources.

Of the four monitoring locations in the Central G sub-catchments that reported maximum PFAS concentrations, three of the wells are located near the Monocell (MW349), downgradient of the Former Fire Training Area (PSC-6), the Former Fire Station (MW105), and the Former Lavarack Golf Course and Playing Fields (MW121), respectively. The fourth monitoring well, MW124, is located on the western boundary of Catchment G; however, the reported maximum concentrations of PFOS and PFOS + PFHxS were just above detection (ie 0.02 µg/L); PFAS is not typically detected at MW124 (the last reported PFAS prior to the October 2024 result was November 2020). The one off-base monitoring well

in Catchment G that reported its highest PFAS concentrations in August 2023 (MW233), is located immediately downgradient from several on-base PSC locations (ie PSC-2, 3, 4, 5, and 6) and the base dams. Being down-gradient of these PFAS source areas and being located adjacent to the creek draining Catchment G, suggests the elevated groundwater measurements in August 2023 are likely primarily associated with source migration via surface water runoff from on-base areas and infiltration from this creek (and further contributed to in response to the higher rainfall wet season over 2022/2023 when migration might be expected to be more dynamic).

For the East catchment, maximum PFAS concentrations for four of the six monitoring wells were near potential source areas of contamination: the Former Fire Training Area (MW106), the Former B Squadron (MW135), the Land121 Project (MW114), and the Former Caribou Airfield (MW116). The two other monitoring wells that reported maximum PFAS concentrations were located along the eastern base boundary (Catchment L; MW118 and MW119).

In contrast to sampling events prior to October 2024 and the previous OMR (AECOM 2024), the adopted criteria for comparison to groundwater data have been revised (Section 4, OMP, Department of Defence 2025b). This update has been completed to better inform the potential for risk based on exposure pathways and sensitive receptors, and thus better comply with the CSM. As a consequence, the water quality PFAS criteria used to compare measured groundwater data differ between on-base and off-base areas. On-base and off-base data are compared to recreation guidelines and only off-base groundwater data are compared to drinking water guidelines. Ecological guidelines do not apply to on-base or off base groundwater results. For the on-base groundwater data, monitoring wells near potential sources areas of contamination reported concentrations that exceeded the recreational (body-contact) criteria for PFOS, PFHxS, and PFOS + PFHxS. Where these exceedances occurred, they were measured over the OMR monitoring period (and over the extended OMP monitoring period). Occasional exceedances to PFOA guidelines were reported over the broader monitoring period, but they were limited to one monitoring well near the highest PFAS measurements (ie MW128; Former Fire Station). For this OMR monitoring period, recreational guidelines were exceeded at one base boundary monitoring well (MW125S), which as discussed above represents a PFAS condition that is only a recent observation, with some uncertainty in its source. For the off-base monitoring locations, adopted drinking water guidelines were exceeded along the central downgradient transect in Catchment G (MW233 and MW236S) and along the surface water downgradient extent (Gordon Creek) of Catchment J/K/L (MW220S and MW232). The drinking water exceedances at these monitoring wells were consistent during this OMR monitoring period, and over the broader OMP monitoring period. Of note is that PFAS concentrations are higher at MW236S, which is the northernmost monitoring well in the OMP, and adjacent to Ross River), than those measured at the upgradient MW233; this suggests PFAS measured at this location may not be associated with base migration.

An evaluation of the migration of PFAS through the Management Area was conducted by segregating the groundwater monitoring data collected over the broader OMP monitoring period (2020 to 2024) based on the major catchments and on-base, base boundary, and off-base monitoring regions. It is recognised that groundwater flow paths are only inferred, so there is some uncertainty of specific flow paths that follow the surface water drainages within the catchments. However, the segregation of groundwater data in this uncertain manner supports the understanding that the primary sources of PFAS to groundwater, through elevated PFOS, PFOS + PFHxS, and Sum of PFAS concentrations, are located in the Central catchment (eg Catchment G), with low to moderate concentrations of PFAS present at the base boundary, and low to negligible PFAS present off-base along a perceived down-gradient path (Figures E.2, E.3, and E.4; Appendix E). The plotted data and their regional grouping over the OMR monitoring period suggest the presence of localised, high concentration PFAS plumes adjacent to PFAS sources especially in the shallow aquifers, which strongly attenuate once the groundwater flow leaves the base boundary. However, there remains some potential downgradient influence from the base, and possible non-base PFAS source influences, despite the attenuation, with PFAS concentrations at several off-base monitoring locations remaining above adopted drinking water criteria. Outliers are evident in the plots, which are primarily limited to the on-base and base boundary monitoring locations where higher PFAS concentrations are measured; these outliers identify a limited number of PFAS measurements that significantly differ from the rest of the PFAS data measured in these monitoring locations. The outliers have been attributed to a true variability in the dataset.

8.3 Surface water results

The surface water analytical results for PFAS compounds for each monitoring location for the duration of the broader OMP monitoring period, highlighting respective guideline criteria exceedances, are presented in Table B.4, Appendix B. The extent and magnitude of PFAS concentrations in the on-base areas, and in the proximity of known source areas, and in the downgradient off-base areas were consistent during the OMR monitoring period. They were also consistent with previous monitoring efforts since the DSI (RPS/Wood 2019c, 2020b). The highest PFAS concentrations in surface water during the monitoring period were detected in the on-base area adjacent to the Former Fire Station (PSC-4) in Catchment G and downstream of the Land121 Project (PSC-7), the Suspected Fire Training Area (PSC-9), and the Former Caribou Airfield (PSC-10) in Catchment J/K. Maximum measured concentrations of PFAS during the overall OMP monitoring period at these locations were from the following sources:

- Former Fire Station (PSC-4):
  - 11.3 µg/L PFOA (SW109, 1 Mar 2022); 161 µg/L PFOS (SW109, 19 Oct 2024); 196 µg/L PFOS + PFHxS (SW109, 19 Oct 2024); and 298 µg/L Sum of PFAS (SW109, 1 Mar 2022).
- Eastern PFAS Contamination Area (Land121 Project, PSC-7; Suspected Fire Training Area, PSC-9; and Former Caribou Airfield, PSC-10):
  - 0.32 µg/L PFOA (SW121, 9 Oct 2024); 2.84 µg/L PFOS (SW121, 9 Oct 2024); 12.0 µg/L PFOS + PFHxS (SW121, 9 Oct 2024); and 17.8 µg/L Sum of PFAS (SW121, 9 Oct 2024).

For the OMR monitoring period, the only first-time detection was for PFOS at SW245 (0.02 µg/L) in the October 2024 sampling event, which is the uppermost monitoring location in Ross River (characterised as a reference monitoring location as it lies up-gradient from the Base).

Within this OMR monitoring period, measured PFAS concentrations in the surface water monitoring locations did not exceed previous maximum concentrations, except for the monitoring locations identified in Table 8.2. For each location identified with a new maximum concentration, the concentration was less than two times the previous maximum concentration.

Table 8.2 Surface water monitoring locations with concentrations exceeding historical range in the October 2023 to October 2024 monitoring period

Monitoring Catchment	On-base Monitoring Locations	Off-base Monitoring locations
Catchment A (West)	-	-
Catchment G (Central)	August 2023 - SW140 (PFOS, PFHxS, PFOS + PFHxS) October 2024 - SW109 (PFOS, PFOS + PFHxS); SW144 (PFOS, PFOS + PFHxS); SW132 (PFOA, PFOS, PFOS + PFHxS)	October 2024 - SW203 (PFOA, PFOS, PFOS + PFHxS)
Catchment J/K (East)	October 2024 - SW121 (PFOA, PFOS, PFOS + PFHxS)	August 2023 - SW220 (PFOA, PFOS, PFHxS, PFOS + PFHxS); SW242 (PFOS)

The four on-base surface water monitoring locations in the G sub-catchments that reported maximum PFAS concentrations are located near the Former Fire Station (MW109), and along the central drainage course that includes the dams (ie SW144, SW140, and SW132). The off-base surface water monitoring location that reported maximum PFAS concentrations is MW203, which is downgradient of several on-base PSC locations (ie PSC-2, 3, 4, 5, and 6) and the base dams, but immediately upstream of SW205 near the creek confluence with Ross River (the reported maximum

concentrations of PFOS and PFHxS were 1.3 µg/L). The elevated surface water PFAS measurements at SW203 in October 2024 are attributed to source migration via surface water runoff from the on-base areas.

For Catchment J/K, maximum PFAS concentrations during this OMR reporting period were reported at SW121 immediately downstream of the Former Fire Training Area, the Former B Squadron, the Land121 Project, and the Former Caribou Airfield. The two off-base monitoring wells that reported maximum PFAS concentrations (SW220 and SW242) were located further downstream of SW121.

No new maximum concentrations were reported western Catchment A.

In contrast to sampling events prior to October 2024, and the previous OMR (AECOM 2023c), the adopted criteria for comparison to surface water data have been revised (Section 4, OMP; Department of Defence 2025b). This update has been completed to better inform the potential for risk based on exposure pathways and sensitive receptors. Consequently, the adopted PFAS criteria used to compare to measured surface water data differ between on-base and off-base areas. On-base and off-base data were compared to recreation guidelines and only off-base surface water data were compared to drinking water guidelines. Ecological guidelines apply to the on-base dams and off base surface water monitoring locations. For the on-base surface water data, monitoring locations near and downstream of potential sources areas of contamination reported concentrations that exceeded the recreational (body-contact) criteria for PFOS, PFHxS, and PFOS + PFHxS. The locations that consistently exceeded the recreational criteria primarily included those near the Former Fire Station (SW109 and SW110; PFOS, PFHxS, PFOS + PFHxS), the dams (SW139 and SW140; PFOS + PFHxS) and the base boundary downstream of the dams (SW132; PFOS, PFHxS, PFOS + PFHxS). Where these exceedances occurred, they were measured over the OMR monitoring period and over the broader OMP monitoring period (2020 to 2024). Only one exceedance to the PFOA criterion was reported in the broader OMP monitoring period (SW109; Former Fire Station), which occurred in March 2022.

For this OMR monitoring period, the ecological guideline for PFOS was consistently exceeded at the monitoring locations in the middle and lower dams (SW139 and SW140) and at off-base monitoring locations, which included SW233 and SW203 immediately downstream of the central drainage course through Catchment G (which includes the dams), and SW220 and SW242 in the eastern Catchment J/K, which flows into Gordon Creek. For the off-base areas, the drinking water guidelines were exceeded along the central downgradient transect in Catchment G (SW203 and SW233; PFOS, PFHxS, PFOS + PFHxS) and along the surface water downgradient extent (Gordon Creek) of Catchment J/K (SW220: PFOS, PFHxS, PFOS + PFHxS; SW242: PFOS, PFOS + PFHxS; and SW232: PFOS + PFHxS). The drinking water exceedances at these surface water monitoring locations were consistently reported during this OMR monitoring period, and over the broader OMP monitoring period.

As completed for the groundwater data, an evaluation of the surface water migration of PFAS through the Management Area was conducted by segregating the surface water monitoring data collected over the broader OMP monitoring period (2020 to 2024) based on the major catchments and on-base, base boundary, and off-base monitoring regions. In contrast to the inferred flow paths of groundwater through the Management Area, more certainty of specific flow paths is evident through the surface water drainages within the catchments. This segregation of surface water data supports the understanding that the primary sources of PFAS to surface water, primarily PFOS, PFOS + PFHxS and Sum of PFAS, are located in the central catchment of the Management Area (eg Catchment G), with low to moderate concentrations of PFAS present at the base boundary, and low to negligible PFAS present off-base along a perceived down-gradient path (Figures E.5, E.6a and b, and E.7; Appendix E) indicating a strong attenuation of PFAS once it leaves the base boundary.

The surface water data in western Catchment A suggest a low level PFAS source in the catchment (Figure E.5; Appendix E), despite no discernible upstream surface water source. The source may reflect an off-base upstream source; however, the surface water PFAS (low concentration) may also be associated with the measured groundwater PFAS at the corresponding upstream base boundary monitoring locations MW125I/S (particularly MW125S) despite PFAS consistently not being detected at the base boundary surface water monitoring location (SW126). In Figure E.5, Appendix E, upstream reference data are included from three monitoring locations in Ross River (SW227, SW244, and SW245); PFAS is mostly non-detect or close to the LOR at these reference surface water monitoring locations.

The central Catchment G currently possesses surface water monitoring locations that report the highest on-base PFAS concentrations, particularly those near the Former Fire Station (PSC-4) (Figure E.6a; Appendix E). To improve the visualisation of the downstream PFAS attenuation, the scale on the y-axis of Figure 6a was reduced for improved resolution at the base boundary, off-base, and reference area monitoring locations (Figure E.6b; Appendix E).

A boxplot showing the distribution of PFAS concentrations along a downstream gradient from SW144 to SW205 (Figure E.7a and b; Appendix E) along the central drainage course through Catchment G illustrates the predominance of PFAS contamination from the Former Fire Station (ie SW109 and SW110) to on-base surface water drainage, which then strongly attenuates through the downstream dams (ie SW139 and SW140), the base boundary, and downstream off-base monitoring locations (ie SW233, SW203, and SW205).

The eastern Catchment J/K has several on-base PFAS sources, which include the Stockpile Designated Area (PSC-12), the Former B Squadron (PSC-11) the Former Helicopter Landing Area (PSC-8), the Land121 Project (PSC-9), and the Former Caribou Airfield (PSC-10). On-base surface water PFAS is predominantly measured at two monitoring locations in this catchment (ie SW119 and SW121), which are located immediately downgradient of PSC-7, PSC-8, PSC-9, and PSC-10, respectively. These specific monitoring locations also screened in as locations with an elevated potential for a risk profile change due to recent data measuring in the upper bound of their data record and PFAS concentrations visibly increasing (see Section 10).

A boxplot showing the distribution of PFAS along the downstream gradient from SW113 to SW232 (Figure E.9; Appendix E), which comprises drainage of three on-base water courses in Catchment J/K/L to Gordon Creek, provides another perspective of the PFAS trend in the catchment (ie through the PFAS source areas, across the base boundary and downstream to the off-base monitoring locations). From the on-base surface water monitoring locations (specifically SW119 and SW121), PFAS attenuates through the base boundary to the off-base locations; PFAS concentrations (especially SW135) are similar to the PFAS measured at the base boundary in the central Catchment G (ie SW132). As the on-base surface water PFAS data in Catchment J/K/L are not as substantial as the Catchment G on-base PFAS, the similar base boundary concentrations could likely be attributed to the potential PFAS sources being closer to the base boundary in Catchment J/K and the relatively lower rate of attenuation with distance from the source (Figure A.4; Appendix A). In this regard, the PFAS measurements at the first downstream off-base monitoring location (SW220) are similar in range to SW233 in central Catchment G. The lesser change in concentration of PFAS between the on-base and off-base areas in Catchment J/K (Figure E.8) compared to the relative change in concentration of PFAS between the on-base and off-base areas in in Catchment G (Figure E.7) suggests a higher attenuation of PFAS as surface water leaves the base in Catchment G. The exact cause for this attenuation is uncertain; however, a number of factors may contribute to this, including:

- The PSCs in catchment G are located further upgradient from the base boundary than the PSCs in Catchment J/K, which are close to the base boundary;
- Catchment G has a larger water yield and storm event flow rates compared to Catchment J/K (despite the lower range of PFAS measured at the source areas monitoring locations in Catchment J/K), which increases mobilisation and dilutes PFAS in surface waters;
- Catchment G has a series of dams that SW drains into, which may serve as a sink (eg established vegetation uptake, sediment deposition and trapping, along with increased retention); and
- Catchment K has had recent land remediation and redevelopment (ie Land121 redevelopment between 2018 and 2020), which may result in more mobilisation potential due to this disturbance.

8.4 Sediment results

The sediment analytical results for PFAS compounds for each monitoring location for the duration of the broader OMP monitoring period are presented in Table B5, Appendix B. The extent and magnitude of sediment PFAS concentrations in the on-base area, in the proximity of known source areas, and in the downgradient off-base area were consistent during

the OMR monitoring period. They were also consistent with previous results collected since the DSI (RPS/Wood 2019c, 2020b).

The highest PFAS concentrations in sediment during the OMR monitoring period were detected in the on-base area downstream of the Land121 Project (PSC-7), the Suspected Fire Training Area (PSC-9), and the Former Caribou Airfield (PSC-10) in Catchment K and adjacent to the Former Fire Station (PSC-4) in Catchment G. Maximum concentrations of PFAS during the broader OMP monitoring period at these locations were as follows:

- Former Fire Station (PSC-4):
  - 0.0145 mg/kg PFOA (SD109, 9 Oct 2024); 2.05 mg/kg PFOS (SD109, 9 Oct 2024); 2.20 mg/kg PFOS + PFHxS (SD109, 9 Oct 2024); and 2.31 mg/kg Sum of PFAS (SD109, 9 Oct 2024).
- Eastern PFAS Contamination Area (Land121 Project, PSC-7; Suspected Fire Training Area, PSC-9; and Former Caribou Airfield, PSC-10):
  - 0.0435 mg/kg PFOA (SD121, 9 Oct 2024); 0.418 mg/kg PFOS (SD121, 9 Oct 2024); 0.92 mg/kg PFOS + PFHxS (SD121, 9 Oct 2024); and 1.31 mg/kg Sum of PFAS (SD121, 9 Oct 2024).

For the 2024 OMR monitoring period, there were several first-time detections of PFOA, but no first-time detections of PFOS or PFOS + PFHxS. In the August 2023 sampling event, there was one first-time detection of PFOA at SD129, a base boundary monitoring location located on the western side of Catchment G, and two first-time detections of PFOA (close to the LOR) at SD217 and SD232, which are off-base sediment locations in Catchment A and Catchment G, respectively. In the October 2024 sampling event, PFOA was detected for the first time at SD132, a base boundary monitoring location downstream of the dams, and at SD242, an off-base monitoring location in Catchment J/K/L. There were no first-time detections of PFOS, PFOA or PFOS + PFHxS during the March 2024 sampling event.

Within this OMR monitoring period, measured PFAS concentrations at several sediment monitoring locations exceeded previous maximum concentrations, which are listed in Table 8.3. For each location identified with a new maximum concentration, the concentration was less than two times the previous maximum concentration, except for SD109, SD110, SD121, and SD211 (all in October 2024) where the maximum concentrations were four to eight times, two to four times, two to 20 times, and two to four 4 times the previous maximum concentrations, respectively. The maximum concentrations for SD109 and SD121 are listed above, and the maximum concentration reported for SD110 was 0.77 mg/kg and 0.0063 mg/kg for SD211.

Table 8.3 Sediment monitoring locations with concentrations exceeding historical range in the October 2023 to October 2024 monitoring period

Monitoring Catchment	On-base Monitoring Locations	Off-base Monitoring locations
Catchment A (West)	-	August 2023 - SD217 (PFHxS, PFOS + PFHxS) March 2024 - SD217 (PFOA)
Catchment G (Central)	August 2023 - SD110 (PFOS); SD129 (PFOA, PFOS, PFHxS, PFOS + PFHxS) March 2024 - SD128 (PFOS, PFOS + PFHxS); SD139 (PFOS, PFOS + PFHxS) October 2024 - SD109 (PFOA, PFOS, PFHxS, PFOS + PFHxS); SD110 (PFOA, PFHxS, PFOS + PFHxS)	August 2023 - SD205 (PFOS, PFOS + PFHxS); SD233 (PFOA, PFHxS) October 2024 - SD203 (PFHxS, PFOS + PFHxS); SD211 (PFOS, PFOS + PFHxS); SD212 (PFOS, PFOS + PFHxS)
Catchment J/K (East)	August 2023 - SD119 (PFOA, PFOS, PFHxS, PFOS + PFHxS) October 2024 - SD121 (PFOA, PFOS, PFHxS, PFOS + PFHxS)	August 2023 - SD232 (PFOA); SD242 (PFOS)

In Catchment A, maximum PFAS concentrations were reported at SD217 in August 2023 and March 2024. This location is downstream of the groundwater monitoring wells, MW125I/S, which also reported maximum PFAS concentrations and have shown an increasing trend during this OMR period. The potential source of the elevated PFAS in this catchment has not been confirmed (ie there are no identified on-base or off-base PFAS contamination source areas upgradient of this sediment monitoring location). In Figure E.10, Appendix E, upstream reference data are included from three monitoring locations in Ross River (SD227, SD244, and SD245); PFAS are mostly non-detect or close to the LOR at these reference surface water monitoring locations.

Three of the five on-base sediment monitoring locations in Catchment G that reported maximum PFAS concentrations were located near and immediately downstream of the Former Fire Station (SD109, SD110, and SD139), with sediment PFAS concentrations at SD109 approximating four times the previous maximum prior to this OMR period. The other two on-base locations were on the base boundary in the eastern portion of Catchment G (SD129 and SD139), for which there are no defined upstream contamination sources. Historical information from base stakeholders has indicated that past fire-risk management practices may have included the use and storage of AFFF in areas around the base beyond those identified specifically as PSCs. Occurrences of PFAS on base and at the base boundary where there are no identified upgradient source areas may reflect these residual non-specific sources. The off-base sediment monitoring locations that reported maximum PFAS concentrations were downstream of SD128 (SD211 and SD212), and further downstream (ie SD203 and SD205), following the confluence with the creek immediately downstream of the dams and potential contamination sources in that creek catchment. The elevated sediment PFAS measurements at the base boundary and downstream monitoring locations to the east of Catchment G are likely associated with source migration via surface water runoff from the on-base areas, despite no clear source area.

For Catchment J/K, maximum PFAS concentrations during this OMR reporting period were reported at SD119 and SD121 immediately downstream of the Former Fire Training Area, the Former B Squadron, the Land121 Project, and the Former Caribou Airfield. The two off-base sediment monitoring locations that reported maximum PFAS concentrations (SD242 and SD232) were located further downstream of SD121.

Currently, there are no endorsed human health or ecological guideline values available for PFAS in sediment. However, a visual examination of the PFAS concentrations through the OMP catchments and their downstream gradient from on-base to off-base monitoring locations (2020 to 2024) was completed as undertaken for groundwater and surface water (Figures E.10, E.11, and E.12; Appendix E).

Sediment data in western Catchment A of the Management Area identifies low level PFAS concentrations in the off-base region of the catchment and lower level PFAS at the base boundary (Figure E.10; Appendix E), despite no discernible upstream groundwater or surface water source. As for surface water in this catchment, the source of the PFAS remains uncertain, but suggests an off-base origin of PFAS; however, as for the detected surface water PFAS at this monitoring location, the sediment PFAS may be associated with the measured groundwater PFAS at the corresponding upstream base boundary monitoring locations MW125I/S.

The central Catchment G currently possesses monitoring locations with the highest on-base sediment PFAS concentrations, dominated by locations adjacent to the Former Fire Station (PSC-4) and the 2CAV Former Helicopter Squadron (PSC-3) (ie SD109/SD110 and SD144, respectively). Sediment-associated PFAS attenuates downstream of these sources through the base boundary and downstream off-base monitoring locations (Figure E.11; Appendix E); it is noted that sediment PFAS concentrations are slightly higher at the off-base monitoring locations relative to those at the base boundary. A box plot showing the distribution of sediment PFAS concentrations along a gradient from SW144 to SW205 (Figure E.13) suggests the predominant influence PFAS contamination from the Former Fire Station source area has on the surface water drainage through the catchment, which attenuates through the downstream dams, the base boundary, and off-base monitoring locations.

As described for surface water, the eastern Catchment J/K/L has several PFAS sources, which include the Stockpile Designated Area (PSC-12), Former B Squadron (PSC-11) the Former Helicopters Landing Area (PSC-8), the Land121 Project (PSC-9), and the Former Caribou Airfield (PSC-10). Sediment-associated PFAS attenuates downstream of these sources through the base boundary and downstream off-base monitoring locations (Figure E.12; Appendix E); as noted for Catchment G, sediment PFAS concentrations are similar to or the upper bound slightly higher at the off-base

monitoring locations relative to those at the base boundary (ie PFOS, Sum of PFAS). As for surface water, on-base sediment PFAS concentrations are dominated at monitoring locations SW119 and SW121, which are located immediately downgradient of PSC-7, PSC-8, PSC-9, and PSC-10, respectively, and adjacent to the base boundary. From these on-base areas, PFAS collectively attenuates through the base boundary but shows higher residual PFAS in the downstream off-base locations, specifically SD220, which is immediately downstream of SD119 and SD121. A box plot showing the distribution of sediment PFAS concentrations along a gradient from SD113 to SD232 (Figure E.14; Appendix E) comprising drainage of two on-base water courses in Catchment J/K to Gordon Creek provides another perspective of the PFAS trend in the catchment (ie through the PFAS source areas, across the base boundary and downstream to the off-base monitoring locations).

8.5 Triggers for action and/or review

The 2024 October (dry season) SER (WSP 2025; Appendix D) incorporated a screening assessment of the groundwater data to identify groundwater and surface water monitoring locations, based on the PFAS data record for those locations, to indicate if there was potential for a risk profile change. The screening consisted of evaluating the groundwater and surface water data with reference and comparison to adopted criteria applicable to their monitoring region, determining if the most recent data fell within an upper bound of the monitoring location data record (ie 65th or 85th percentiles), and if the data showed a visually increasing trend over the last three wet seasons.

The selection of 65th and 85th percentiles in the trigger screening was based on the relatively small sample count per monitoring location (eg up to 12 data points). These specific data thresholds represent reasonable upper bound concentrations for use in comparing measured data to flag potential for changes to risk profile, without being too conservative or not conservative enough. Also, the use of a visual method to discern an increasing trend in PFAS data as a screening step for each monitoring location instead of a statistical analysis is preferred due to the small available dataset groundwater and surface water results; small datasets make it difficult to apply a statistical trend analysis with an adequate confidence level. An increasing trend is determined if there are three consecutive increasing measurements of wet season PFAS measurements over the previous three years (ie representing the past three wet seasons).

The following data screening triggers, and the associated risk characterisation and corresponding high-level responses used in the OMP are:

- If PFAS concentrations are not detectable (<LOR) or measured below the screening criteria applicable to the monitoring location (eg on-base, off-base) – Negligible potential to result in a risk profile change (Trigger 0) – Response: Monitoring may be continued, reduced, or ceased.
- If PFAS concentrations are detectable, above the adopted screening criteria applicable to the monitoring location (eg on-base, off-base), and have the potential to affect the risk profile for that location, further assessment and response will be required:
  - If PFAS is reported at a concentration greater than the 85th percentile of the existing data for the monitoring location and shows a visually increasing trend for the previous three (3) wet seasons – High potential to result in a risk profile change (Trigger 3) – Response: Data verification will be undertaken, and if verified, further assessment and mitigation responses required.
  - If PFAS is reported at a concentration greater than the 65th percentile of the existing data for the monitoring location and shows a visually increasing trend for the previous three (3) wet seasons – Elevated potential to result in a risk profile change (Trigger 2) – Response: further assessment to be considered.
  - If PFAS is reported at a concentration that is less than the 65th percentile of the existing data for the monitoring location and does not show a visual increasing trend for the previous three (3) wet seasons – Low potential to result in a risk profile change (Trigger 1) – Response: monitoring to be continued.

Further detail regarding the trigger screening process, including a PFAS screening trigger framework, is provided in Section 7 of the updated OMP (Department of Defence 2025b).

For this OMR, the groundwater and surface water data trigger screening assessment accounting for wet season data collected since the inception of the OMP, including assessment outcomes and responses actions resulting from the screening assessment, has been summarised below.

The screening assessment is not applied to sediment data. This is because sediment represents a secondary pathway for PFAS transport within the Management Area.

More detail regarding the screening level assessment is provided in the 2024 October (dry season) SER (WSP 2025; Appendix D).

8.5.1 Groundwater

For the 43 groundwater samples evaluated in the trigger screening assessment, no groundwater monitoring locations screened as indicating a high potential for change in risk profile.

Eight on-base monitoring locations screened as indicating an elevated potential for change in risk profile. These locations included MW116 (Eastern PFAS Contamination Area), MW105 (Former Fire Station), MW065 and MW121 (Lavarack Golf Course & Sporting Field), MW138 (Lavarack Dams), and MW119 and MW125I/S (Base Boundary). The primary basis for an elevated potential characterisation was PFAS concentrations measured higher than previous data or measurements exceeding the 85th percentile of previous data, so measured data represented notably higher concentrations than measured in the period of monitoring (since 2018). Two locations on the eastern base boundary also indicated visually increasing trends for some PFAS (MW116 and MW119). While this increasing trend along with maximum measured PFAS would have screened the locations as a high potential for risk profile change, the relatively low concentrations reduced the screening level to elevated potential. MW125S was also reduced to an elevated potential for risk profile change despite PFOS concentrations indicating an increasing concentration trend. The reduced screening level was primarily due to the PFOS concentrations being relatively low, especially in comparison to the other PFOS concentrations, which were elevated but not increasing. The immediate response actions for these monitoring locations was to verify the results via consideration of the data validation and to reevaluate the screening outcomes for these monitoring locations after the 2025 wet season sampling event.

Four groundwater monitoring locations screened as low potential for risk profile change. These included MW131 (Former Fire Training Area), MW123S and MW122 (Lavarack Golf Course & Sporting Field), and MW236S (Off-Base). The primary basis of this screening was PFAS measured higher than the 65th percentile of previous data at these locations, so data represented an upper bound relative to the data range over the period of the OMP. The immediate response action was to continue monitoring these locations in the 2025 wet season sampling event.

The remaining 29 groundwater monitoring locations reported measured PFAS that screened as negligible potential for risk profile change based on concentrations that were consistent with previous measurements or did not indicate increased potential for contamination (noting that groundwater monitoring wells MW019 and MW021 were excluded from the screening as no previous data were available for screening evaluation). The immediate response action was to continue monitoring these locations in the 2025 wet season sampling event.

A visualisation of the change to risk profile characterisation for the groundwater monitoring locations as described above is shown in Figure A.12, Appendix A. The tabulated screening assessment for groundwater data collected over the broader OMP monitoring period is provided in Table B.6, Appendix B.

8.5.2 Surface water

For the 22 surface water samples evaluated in the trigger screening assessment, no surface water monitoring locations screened as indicating a high potential for change in risk profile.

Eight monitoring locations screened as indicating an elevated potential for change in risk profile, which meant for these locations, measured PFAS concentrations were greater than the 65th percentile of the existing data for the monitoring location and showed a visually increasing trend for the previous three wet seasons. These included on-base monitoring locations SW119 and SW121, located downstream of the Eastern PFAS Contamination Area in Catchment K, SW109, located near the Former Fire Station, and SW139, SW144, and SW132, located in the central Catchment G, in the lower

dam and the base boundary location immediately downstream of the lower dam. Two of these monitoring locations were located off-base (SW233 and SW203), located immediately along a downstream gradient from the dams in the central drainage course in Catchment G. The immediate response action for these monitoring locations was to verify the results via consideration of the data validation and to reevaluate the screening outcomes for these monitoring locations after the 2025 wet season sampling event.

Five surface water monitoring locations screened as low potential for risk profile change, which meant that measured PFAS concentrations were less than the 65th percentile of the existing data for the monitoring location and did not show a visually increasing trend over the previous three wet seasons. These locations included two on-base locations: SW140, at the discharge location at the lower dam in the central Catchment G, and SW135, at the base boundary in eastern Catchment K. Three off-base location in this category included the downstream SW205, located just upstream of the central Catchment G confluence with Ross River, and SW220 and SW242, located downstream in the eastern Catchment K. The immediate response action for these monitoring locations was to continue monitoring in the 2025 wet season sampling event.

The remaining nine surface water monitoring locations, which included the reference Ross River and the lake within the suburb of Idalia, screened as negligible potential for risk profile change, which meant that PFAS concentrations were not detected or measured below the applicable screening criteria. There was no immediate response action for these monitoring locations.

A visualisation of the change to risk profile characterisation for the surface water monitoring locations as described above is shown in Figure A.13, Appendix A. The tabulated screening assessment for surface water data collected over the broader OMP monitoring period is provided in Table B.7, Appendix B.

9 Conceptual site model

A CSM is a representation or overall picture of the Management Area that shows the possible relationships between a contaminant source, migrations and exposure pathways, and receptors. This is known as the source-pathway-receptor (SPR) model. For a potential risk to be present, all three of the following components must exist:

- A potential source of contamination;
- A pathway that allows the receptor to be exposed to, or affected by, the contaminant; and
- A receptor that could be adversely affected by the contaminants.

Each of these components is described in detail in the following subsections.

A visualisation of the source – pathway – receptor relationships in the CSM is presented in the PMAP (Appendix B; Department of Defence 2025a).

9.1 PFAS sources

Primary and secondary source areas identified at the base are presented in Table 2.1 and a map showing the source areas is provided as Figure A.2, Appendix A. Since the previous OMR, the Land121 stockpile has been removed and validated to confirm it no longer represents a source area.

9.2 PFAS migration pathways

PFAS can travel from a source to human or ecological receptors by surface water or groundwater. These are referred to as transport (or migration) pathways. The DSI (RPS/Wood 2019a) identified that the dominant transport pathway for PFAS through and from Lavarack Barracks was via surface water migration. It was noted that whilst groundwater pathways do exist, they are limited due to the nature of the geology/hydrogeological setting, such as low hydraulic conductivity, as well as the intermitting and disconnected groundwater flow paths on-base. In general, there is likely limited groundwater-surface water connectivity due to the low permeability of the alluvial soils on-base, except around drains and creeks up-stream of the Lower Lavarack Dam.

These migration pathways, and the potential mass of PFAS migrating off-base were further assessed as part of the PFAS Annual Mass Discharge Report (WSP Golder 2023a). This report identifies the mass of PFAS migrating in both the surface water and groundwater transport pathways. The surface water migration was sub-divided into catchments based on the natural surface water flow to enable an understanding of the source areas that may be contributing to the PFAS mass in each catchment at the northern (downstream) boundary of the base. The surface water sub-catchments are presented in Figure A.2, Appendix A. The groundwater was assessed along the north (down hydraulic gradient) boundary, along a flux plane, divided unto individual ‘faces’ connecting adjoining wells.

The annualised PFAS mass discharge indicates that surface water is the dominant transport pathway for PFAS, with 93% of the PFAS mass migrating via this pathway, with PFAS mass discharge via groundwater estimated to account for, at most, 7% of the annual PFAS mass migration. off-base PFAS mass discharge via surface water is dominated by discharge from Catchment G (Central), which contains the on-base series of dams and the priority source areas, the Former Fire Station (PSC-4), and the Former Fire Training Area (PSC-6). The transport pathways identified at and surrounding the base are summarised in Table 9.1.

Table 9.1 PFAS transport pathways, Lavarack Barracks Management Area

Transport Mechanisms	Catchment / Well ID	Potential Source Areas within Catchment	
Surface Water	A-2	None Identified	
	B	None Identified	
	C	None Identified	
	D	PSC-1 (soil stockpile area)	
	E	Secondary PSC-13 (golf course)	
	F	Secondary PSC-13 (golf course)	
	G	PSC 2 (suspected AFFF disposal area), PSC-3 (former helicopter squadron), PSC-4 (former fire station), PSC-5 (Monocell), and PSC 6 (former fire training area)	
	H	Secondary PSC-14 (sporting fields – western portion)	
	I	Secondary PSC-14 (sporting fields – eastern portion)	
	J	PSC-12 (stockpile designated area 2) and part of PSC-11 (former B Squadron)	
	K	PSC-7 (Land121 Project, excluding the stockpile), PSC-8 (former helicopter landing area), PSC-9 (suspected fire training area), PSC-10 (former Caribou airfield) and PSC-11 (former B Squadron), and potential new sources Bulk Fuel Facility and Petroleum Platoon	
	L	None Identified	
Groundwater	MW125S		Wells represent off-base migration route along the downgradient boundary
	MW124		
	MW123S	PSC-4 (former fire station)*	
	MW121		
	MW120		

Transport Mechanisms	Catchment / Well ID	Potential Source Areas within Catchment
	MW002	PSC-8 (former helicopter landing area), PSC-10 (former Caribou airfield) and PSC-11 (former B Squadron)
	MW116	
	MW139	

Source: The 2025 PMAP (Table 2; Department of Defence 2025a).

PSC 5 (Monocell) and PSC 6 (Former Fire Training Area) were originally considered to be within Catchment J; however, subsequent investigation that flow from these areas were into Catchment G (WSP Golder 2023b).

PSC = potential source area; AFFF = aqueous film forming foam.

* - MW123S was assigned to PSC-4 Former Fire Station in the Mass Discharge Study (WSP Golder 2023a).

9.3 Receptors

The evaluation of risk to a set of identified human and ecological receptors via the above exposure pathways has been undertaken in the HHRA and the ERA. A summary of the risks to human and ecological receptors is provided in Section 9.3.1 and Section 9.3.2, respectively.

9.3.1 Human health receptors

A HHRA (RPS/Wood 2019b) was undertaken to quantitatively assess potential risk to human health associated with exposure to PFAS in soil, sediment, surface water and groundwater within the Management Area. The HHRA also considered potential human health risks from the consumption of home-grown fruit, vegetables, chicken eggs, and seafood within Ross River and associated tributaries. A complete exposure pathway must exist for a person to be exposed to PFAS. If the exposure pathway is not complete, then no PFAS exposure will occur and, as a result, no risk to health exists.

The HHRA process included a comparison of on-base PFAS concentrations within the different media (eg soil, surface water) to health-based investigation levels (HIL) or guideline values (eg PFAS NEMP 3.0); this is a Tier 1 or screening level assessment. These criteria and guideline values are highly conservative, deliberately set at concentrations well below levels where adverse health effects are expected to occur in the general population.

Concentrations of PFAS in the tissue of some fish species were found to be above Tier 1 screening values. This triggered a Tier 2 assessment that considered a more detailed evaluation of the potential exposure from eating locally caught fish. Samples of water from one Lavarack Barracks dam used to irrigate the golf course were found to exceed Tier 1 screening values for recreational use. Although the dam was not used for swimming or other recreational activities, the potential for exposure to PFAS in water to irrigate the golf course was further considered in the Tier 2 assessment. Additionally, because there are no applicable Tier 1 criteria to evaluate produce consumption following irrigation, this pathway was also carried into the Tier 2 assessment.

The HHRA concluded that the potential risk from exposure to PFAS impacted media from the base was low and acceptable. A summary of the key human receptors is presented in Table 9.2.

Table 9.2 PFAS receptors and risk – human health (based on HHRA, [RPS/Wood 2019c]), (summarised from the 2025 PMAP [Department of Defence 2025])

Who? **(Receptor Populations)**	**Where?** **(Source Location)**	**How?** **(Exposure Pathway)**	**What?** **(Risk to Health)**	**Why?** **(Reason for Risk)**	**More Details** **(Discussion)**
Local residents	Off-base Soil in yards	Accidental ingestion (swallowing) of soil Inhalation of soil and dust (soil-derived)	Very low to negligible	Low concentrations in residential and public soil	PFAS measured within off-base **soil** from private residential land were below health-based investigation levels set for residential soil. Two samples taken from public walkways were below health-based guideline values for recreational areas. Concentrations below Tier 1 criteria for surface water, soil and sediment, as well as groundwater for non-potable use for ingestion, dermal contact and inhalation.
Local residents	Off-base Groundwater	Drinking the water extracted from groundwater	Very low	Limited use of groundwater for consumption	The Water Use Survey (204 respondents) indicated that 25% of residents had either a groundwater bore or surface water on their property. No respondent indicated bore (groundwater) water or surface water used as a primary source of drinking water. The Management Area is served by Townsville City-supplied water. Two residents, in areas with PFAS concentrations below current health advisory levels, indicated using bore (groundwater) water as a secondary source for drinking. As use of groundwater has been identified as a source of drinking water to a limited number of residents this indicates a potentially complete exposure pathway to human health risk. It is recognised that this exposure pathway is limited to a small proportion of residents.
Local residents	Off-base Garden produce	Eating fruit, vegetables, and poultry eggs irrigated with groundwater and	Very low	Concentrations of PFAS in home grown produce are low Consumption of 10% of food	PFAS concentrations in home-grown produce, due to bioaccumulation from groundwater used for irrigation, below guideline levels for ingestion based on the assumption that 10% of total fruits, vegetables and poultry eggs eaten daily was home-grown (ie not from outside sources) It was also noted that the home grown produce, vegetables, fruit and poultry do not appear to be widely grown within the Management Area.

Who? (Receptor Populations)	Where? (Source Location)	How? (Exposure Pathway)	What? (Risk to Health)	Why? (Reason for Risk)	More Details (Discussion)
		grown/collected at home		consumed daily is home grown	
Recreational users of the Ross River, tributaries, and local lakes	Off-base Surface water and sediment	Accidental ingestion and inhalation of water during swimming, boating, and other water activities	Very low to negligible	Low concentrations in surface water and sediments	PFAS measured in surface water and sediments of local rivers, creeks, lakes, and tributaries below the health-based recreational screening criteria considering incidental ingestion and dermal exposures.
Recreational Anglers	Off-base Ross River and its tributaries (estuarine and freshwater)	Eating locally caught seafood	Low	Considering a combination of: Low PFAS concentrations typically measured in fish and the specific seafood species Number of local fish meals per week Includes various locations - Ross River, Northview Lake and Fairfield Lake	Measured PFAS concentrations within milkfish suggest consumption of two meals per week caught from within Fairfield Lake (within the suburb of Idalia) will not result in levels of PFAS above TDI. Precautionary advice has been issued by Queensland Health for recreational fishing and the consumption of fish from the lakes within Idalia and Gordon Creek. Signage providing this precautionary advice has been erected around the lakes within Idalia, as well as existing signage at Alpin's Weir.

Who? (Receptor Populations)	Where? (Source Location)	How? (Exposure Pathway)	What? (Risk to Health)	Why? (Reason for Risk)	More Details (Discussion)
Recreational Shellfish Harvesters	Off-base Ross River and its tributaries (estuarine and freshwater)	Eating locally harvested shellfish	Very low to negligible	Low concentrations of PFAS in shellfish	Recreational shellfish harvesting considered a negligible risk based on PFAS concentrations in blue swimmer crab and mud crab being below screening levels.
Defence personnel, contractors, and visitors	On-base Soil	Accidental ingestion of soil Inhalation of soil and dust (soil-derived)	Very low to negligible	Low concentrations in soil	PFAS within on-base **soil** were 10 to 1,000 times lower than nationally agreed health-based investigation levels for industrial and commercial worker scenarios. This includes maintenance workers working in trenches and pits within the soil. PFOS + PFHxS concentrations were found to exceed the investigation levels in 6 soil samples in the Former Fire Station where remediation is scheduled to be completed. One concrete sample was also found to have PFOS + PFHxS concentrations that exceeded the investigation levels. This is considered outliers within a small area, and people would not commonly access that location, resulting in minor, irregular exposure.
Defence personnel, contractors, and visitors	On-base Groundwater	Drinking the water extracted from groundwater	Extremely low to negligible	No exposure pathway to groundwater	On-base **groundwater** is not extracted for use as a drinking water or irrigation supply; therefore, this exposure pathway is incomplete. Groundwater is found greater than 3 m below ground level; therefore, construction or services workers are unlikely to come into contact with groundwater during on-base excavation activities. If groundwater is to be encountered during excavation, exposure can be controlled through Work Health Safety protocols. As such, people are not exposed to PFAS in groundwater.
Defence personnel, contractors, and visitors	On-base Surface water Sediments	Direct contact with surface water and sediments	Extremely low to negligible	No exposure pathway to surface water and sediments	On-base **surface water** bodies, such as Top, Middle and Lower Dams, are not used for recreation. Base personnel do not enter these water bodies to swim or boat. Therefore, no complete exposure pathways exist.

Who? (Receptor Populations)	Where? (Source Location)	How? (Exposure Pathway)	What? (Risk to Health)	Why? (Reason for Risk)	More Details (Discussion)
Defence personnel, contractors, and visitors. Adults and children utilising the golf course	On-base Golf course irrigated with water from the Lower Dams	Direct contact with surface water used to irrigate the golf course	Very low	Limited exposure	The potential for exposure to PFAS in surface water used to irrigate the golf course is limited. This is based on the intermittent frequency of use of the golf course, the duration of time spent on irrigated areas, and the limited exposure pathway to the water once it has been used to irrigate the golf course areas. The golf course has subsequently been closed and as such irrigation has ceased.

TDI = tolerable daily intake.

9.3.2 Ecological receptors

An ERA (RPS/Wood 2020a) was undertaken to assess potential risk to the environment. Exposure pathways for terrestrial plants and invertebrates, including herbivorous and predatory wildlife, were considered as either not complete or not significant based on PFAS concentrations and current/future land use. Aquatic plants, aquatic invertebrates (eg crabs, water bugs, leeches etc.) and fish, as well as herbivorous (plant-eating), piscivorous (fish-eating) and predatory (meat-eating) wildlife, were considered to have potential complete exposure pathways associated with PFAS in surface water, sediment, and sediment pore water within the Management Area.

Key conclusions from the ERA are:

- Risks from PFAS to the aquatic environment are likely elevated, with surface water from the central drainage (Catchments G and R) and eastern drainage (Catchments J/K/L) categorised as high risk;
- Risks from PFAS to the aquatic environment within the lakes in the suburb of Idalia are low to moderate risk; and
- PFOS was noted to accumulate in on-base and off-base biota, most likely to accumulate in fish tissue, and less likely to accumulate in aquatic plants.

A summary of the key ecological receptors is presented in Table 9.3.

Table 9.3 PFAS receptors – ecological (based on ERA [RPS/Wood 2020])

Who? (Receptor populations)	Where? (Source Area)	How? (Exposure Pathway)	What? (Assessment of Risk)	Why? (Reason for Risk)	More Details (Discussion)
Piscivorous, invertivores and herbivore wildlife	Central Drainage	Based on the bird and mammal diet	High	Elevated concentrations of PFOS + PFHxS in tissue samples	PFOS is accumulating in biota both on- and off-base. PFOS least likely to accumulate in aquatic plant tissue and most likely to accumulate in fish tissue.
	Eastern Drainage		High		
	Idalia Suburb Lakes		Low to Moderate		
Aquatic plants, aquatic macroinvertebrates, fish	Central Drainage	Direct contact exposure	Low	Elevated concentrations of PFOS	Maximum and average PFOS concentrations in surface water above the screening value protective of direct contact exposure.
	Eastern Drainage		Low		
	Idalia Suburb Lakes		Low		
Aquatic plants, aquatic macroinvertebrates, fish. Piscivorous, invertivores and herbivore wildlife.	Catchment A	Assessment of all exposure pathways	Negligible	Low concentrations in all media	PFAS concentrations in surface water, pore water, aquatic plants, aquatic invertebrates, and fish all below EILs.
	Catchment C		Negligible		
	Gordon Creek		Negligible		
	Ross River		Negligible		

EIL = ecological investigation level.

9.4 Conceptual site model review

The sampling events completed over the OMR monitoring period provide additional data to further understand the nature and extent of PFAS concentrations in groundwater, surface water, and sediment within the on-base and off-base catchments within the Management Area. Comparison of these data to the broader OMP monitoring dataset indicates that PFAS concentrations in groundwater, sediment, and surface water have been relatively consistent since the CSM was initially developed as part of the DSI (RPS/Wood 2019a). Some fluctuation in the concentrations of individual PFAS compounds at individual monitoring locations is occurring, but the PFAS transport mechanisms and extent of the downstream discharge has not changed.

Key observations in relation to the CSM for this OMR monitoring period include:

- Groundwater, surface water, and sediment PFAS concentrations were mostly within ranges observed over the broader OMP monitoring period.
- The predominant source areas for PFAS in groundwater, surface water and sediment remain in the on-base area adjacent to the Former Fire Station (PSC-4), and downgradient of the Former Fire Training Area (PSC-6) in Catchment G, and the Land121 Project (PSC-7), the Suspected Fire Training Area (PSC-9), and the Former Caribou Airfield (PSC-10) in Catchment J/K. Groundwater, surface water, and sediment monitoring data reflect these sources with monitoring locations associated with and downstream of these source areas reporting the highest PFAS concentrations.
- No new PFAS sources areas were identified; however, data at the base boundary in Catchment A and in the western area of Catchment G indicated an unknown upgradient source. For Catchment A, the source could have an on-base or off-base origin, whereas for the western Catchment G locations, the data suggest an on-base source. The potential for an unknown PSC in these catchments is unlikely; however, the unidentified on-base sources could be associated with undocumented historical base fire-risk management practices. Future monitoring will further inform these observations and whether there are residual sources which have not yet been considered.
- The inferred PFAS transport and migration mechanisms (overland flow, leaching to groundwater, and groundwater/surface water interactions) and the range and extent of on-base and off-base groundwater, surface water, and sediment concentrations remain consistent with those reported in RPS/Wood (2019a, 2019c, 2020b) and AECOM (2023c).

Overall, the exposure pathways described in the CSM remain unchanged and no new exposure pathways have been identified for groundwater, surface water, or sediment. No modifications to the CSM are necessary for groundwater, surface water, or sediment at this time; however, future monitoring will continue to evaluate the potential for changes to the CSM understanding (eg Catchment A, western Catchment G).

10 Risk profile

Based on the data assessment for this OMP monitoring period, the risk profile to human health and ecological receptors within the Lavarack Barracks Management Area remains unaffected. The assessment identified that the extent and area-specific magnitude of PFAS in groundwater, surface water, and sediment has not fundamentally changed compared to data collected for the OMP prior to this OMR reporting period. Specifically:

- Groundwater flow direction continues to indicate a northerly flow path to Ross River.
- Groundwater PFAS concentrations were similar to previous monitoring results and no groundwater monitoring locations screened as indicating a high potential for change in risk profile.
  - The potential for PFAS to impact on-base human health through body contact or incidental ingestion and off-base human health through groundwater consumption or use of groundwater for home produce irrigation or other non-potable uses remains low, which is consistent with the HHRA. The HHRA considered these exposure pathways to human health receptors to also be low and acceptable (RPS/Wood 2019b). Therefore, the risk profile to on-base and off-base receptors has not changed. On-going OMP monitoring at the monitoring wells identified with elevated potential for risk profile change is considered appropriate.
- PFAS concentrations in on-base and off-base surface water monitoring locations within the Management Area during this monitoring period were similar to previous monitoring results and no surface water monitoring locations screened as indicating a high potential for change in risk profile.
  - Consistent with the HHRA, the potential for PFAS to impact human health from surface water contact or incidental ingestion, or ingestion of locally caught seafood remains low. Precautionary advice (and associated signage) regarding risks associated with the consumption of fish at the lakes in Idalia remains in place.
  - The extent and magnitude of PFAS in the dams and off-base surface water monitoring locations is consistent with previous monitoring data, and the exposure pathways to terrestrial and aquatic life remains as determined in the ERA.
  - The risk profile to on-base and off-base receptors for surface water has not changed.
- On-base and off-base sediment PFAS concentrations were similar to prior OMP measurements results in the Management Area with SD121 (in the Eastern PFAS Contamination Area) and SD109 (on-base adjacent to the former fire station) consistently exhibiting the highest PFAS concentrations.
  - Therefore, the risk profile to on-base and off-base receptors based on sediment PFAS concentrations reported during this OMR monitoring period has not changed.

10.1 Changes to the risk profile

No changes to the risk profile have been identified; however, the data trigger screening assessment discussed in Section 8.5, identified a number of groundwater and surface water monitoring locations that indicated an elevated potential for a change in risk profile (see also Figure A.12 and Figure A.13, Appendix A). These included:

- Groundwater monitoring locations on the base boundary in the Western Catchment A (MW125I/S), at and immediately downstream of the Former Fire Station (MW105 and MW138), on the base boundary in Catchment G (MW065 and MW121), and on the base boundary of Catchment J/K/L (MW116 and MW119).
- Surface water monitoring locations immediately downstream and downgradient Former Fire Station (SW109), the top and middle dams (SW139 and SW144), and the downstream central drainage course below the dams that includes SW132 (base boundary), and the downgradient off-base locations, SW233 and SW203, and the base monitoring locations associated with the Eastern PFAS Contamination Area (SW119 and SW121).

Future OMP implementations will continue to generate information from these monitoring locations that will continue to be evaluated to determine the potential for changes to the risk profile.

11 Conclusions

Groundwater, surface water and sediment monitoring was completed for the OMP between August 2023 and October 2024 in accordance with the SAQPs (AECOM 2023a; WSP 2024). Data from the DSI (RPS/Wood 2019a) and previous OMP sampling events (AECOM 2021a,b,c; 2022; 2023a,b; 2024a,b; WSP 2025) were reviewed and considered for this report. The data collected for this evaluation met the objectives of the OMP (Department of Defence 2025b).

Groundwater PFAS concentrations are relatively consistent with previous OMP monitoring throughout the Management Area and overall, the data indicate that the nature and extent of PFAS in groundwater in downgradient off-base areas has not changed from the understanding presented in the investigation phases and the PMAP (Department of Defence 2025a), and in the previous OMR (AECOM 2023c).

PFAS concentrations in surface waters throughout the Management Area were similar to previous results. Overall, the data indicate that the nature and extent of PFAS in surface water in downgradient off-base areas has not changed from the understanding presented in the investigation phases and the PMAP (Department of Defence 2025a), and in the previous OMR (AECOM 2023c).

PFAS concentrations and their relative distribution in sediment throughout the Management Area were similar to previous monitoring.

The CSM was reviewed in the context of the data reported for this OMR reporting period and the broader OMP monitoring dataset, and no changes were identified to the sources, pathways or receptors at the base and within the Management Area. The Former Fire Station (PSC-4) in Catchment G, and the Land121 Project (PSC-7), Suspected Fire Training Area (PSC-9), and Former Caribou Airfield (PSC-10) in Catchment J/K continue to be the dominant PFAS sources in their respective catchments, with concentration maxima being measured in off-base and downstream off-base monitoring locations for groundwater, surface water, and sediment., The identifications of higher than previously measured, and increasing, PFAS concentrations at Catchment A, indicates a potential unidentified on-base or off-base PFAS source. No immediate action is required at this time beyond ongoing monitoring under the OMP.

Based on the data reviewed, there were no changes to the on-base and off-base risk profiles, and the results of the screening trigger assessment for groundwater and surface water confirmed that on-going monitoring at locations identified with elevated and low potential for changes in the established risk profile. At this point, the data from this monitoring period suggest conclusions made in the HHRA (RPS/Wood 2019b) and ERA (RPS/Wood 2020a) are still applicable.

Monitoring of the current groundwater, surface water, and sediment monitoring locations under the OMP should continue, which will generate information that informs the magnitude and extent of PFAS in the on-base and off-base monitoring area and evaluates the potential for changes to the CSM and risk profile.

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WSP Golder, 2023c, *Soil and Groundwater Delineation Report, Former Fire Training Area (PSC-5) / Monocell (PSC-6)* Lavarack Barracks, issued October 2023.

WSP Golder, 2025, *Lavarack Barracks Catchment K PFAS Interpretive Report* Lavarack Barracks, issued May 2025.

YSI Environmental, 2005, *Measuring ORP on YSI 6-Series Sondes: Tips, Cautions and Limitations*. Available at: https://www.ysi.com/file%20library/documents/technical%20notes/t608-measuring-orp-on-ysi-6-series-sondes-tips-cautions-and-limitations.pdf.

13 Limitations

This Report is provided by WSP Australia Pty Limited (WSP) for the Department of Defence (Client) in response to specific instructions from the Client and in accordance with WSP's proposal dated 7 February 2024 and agreement with the Client dated 28 February 2024 (Agreement).

13.1 Permitted purpose

This Report is provided by WSP for the purpose described in the Agreement and no responsibility is accepted by WSP for the use of the Report in whole or in part, for any other purpose.

13.2 Qualifications and assumptions

The services undertaken by WSP in preparing this Report were limited to those specifically detailed in the Report and are subject to the scope, qualifications, assumptions and limitations set out in the Report or otherwise communicated to the Client.

Except as otherwise stated in the Report and to the extent that statements, opinions, facts, conclusion and / or recommendations in the Report (Conclusions) are based in whole or in part on information provided by the Client and other parties identified in the report (Information), those Conclusions are based on assumptions by WSP of the reliability, adequacy, accuracy and completeness of the Information and have not been verified. WSP accepts no responsibility for the Information.

WSP has prepared the Report without regard to any special interest of any person other than the Client when undertaking the services described in the Agreement or in preparing the Report.

13.3 Use and reliance

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WSP is not (and will not be) obliged to provide an update of this Report to include any event, circumstance, revised Information or any matter coming to WSP's attention after the date of this Report. Data reported and Conclusions drawn are based solely on information made available to WSP at the time of preparing the Report. The passage of time; unexpected variations in ground conditions; manifestations of latent conditions; or the impact of future events (including (without limitation) changes in policy, legislation, guidelines, scientific knowledge; and changes in interpretation of policy by statutory authorities); may require further investigation or subsequent re-evaluation of the Conclusions.

This Report can only be relied upon for the Permitted Purpose and may not be relied upon for any other purpose. The Report does not purport to recommend or induce a decision to make (or not make) any purchase, disposal, investment, divestment, financial commitment or otherwise. It is the responsibility of the Client to accept (if the Client so chooses) any Conclusions contained within the Report and implement them in an appropriate, suitable and timely manner.

In the absence of express written consent of WSP, no responsibility is accepted by WSP for the use of the Report in whole or in part by any party other than the Client for any purpose whatsoever. Without the express written consent of WSP, any use which a third party makes of this Report or any reliance on (or decisions to be made) based on this Report is at the sole risk of those third parties without recourse to WSP. Third parties should make their own enquiries and obtain independent advice in relation to any matter dealt with or Conclusions expressed in the Report.

13.4 Disclaimer

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Appendix A

Figures

KEY MAP

LEGEND

- Management Area
- Lavarack Barracks Base Boundary
- Suburb Boundary
- Watercourse

0 1,000 2,000 3,000 4,000 5,000

1:75,000 METRES

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)
1. AERIAL IMAGERY AND KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
2. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

TITLE
SITE LOCALITY

CONSULTANT
wsp

YYYY-MM-DD	2025-06-16
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.1

PATH: \\corp.pbwan.net\ANZ\Transition\Golder\Melbourne\Complex\Data\GIS\Jobs\20212145068\Mxd\116-R_OMR_2024\PS129286-116-R-F0\A1-Rev1_Site_Locality.mxd PRINTED ON: 2025-06-16 AT 4:06:34 PM

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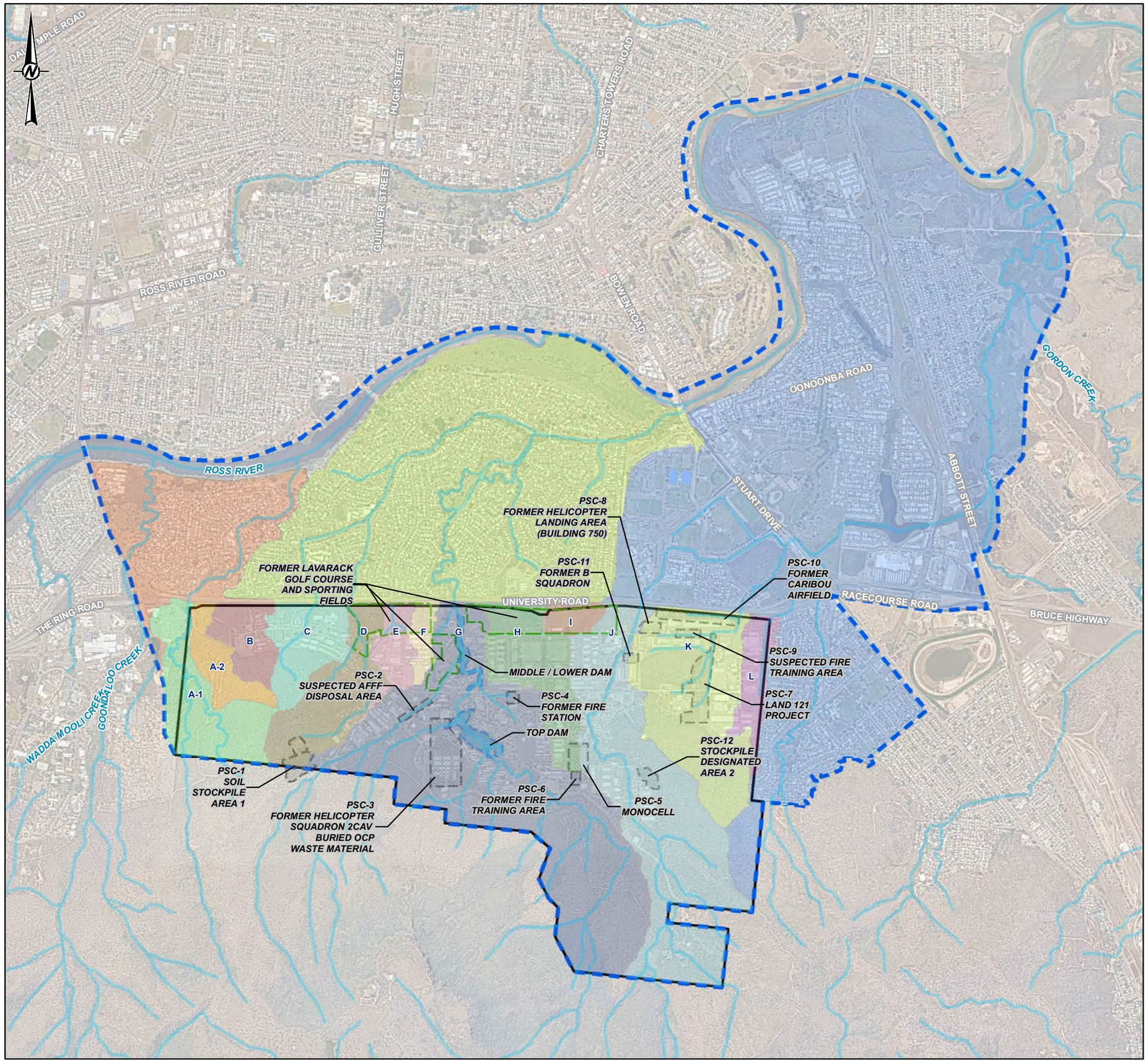

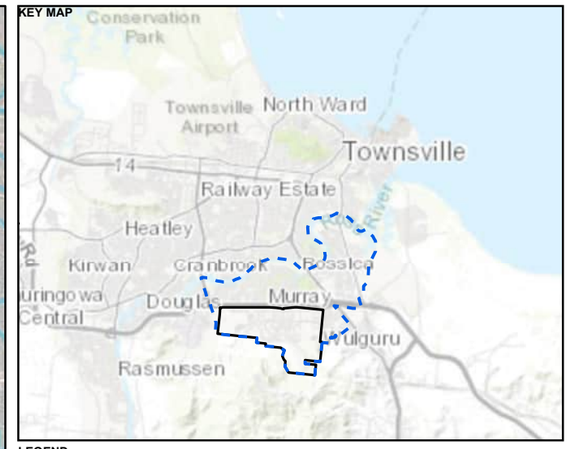

LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate On-Base Sub-Catchments

- A-1
- A-2
- B
- C
- D
- E
- F
- G
- H
- I
- J
- K
- L

Approximate Off-Base Sub-Catchments

- West
- Central
- East

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 19/12/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

TITLE
MANAGEMENT AREA

CONSULTANT
wsp

YYYY-MM-DD	2025-06-16
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.2

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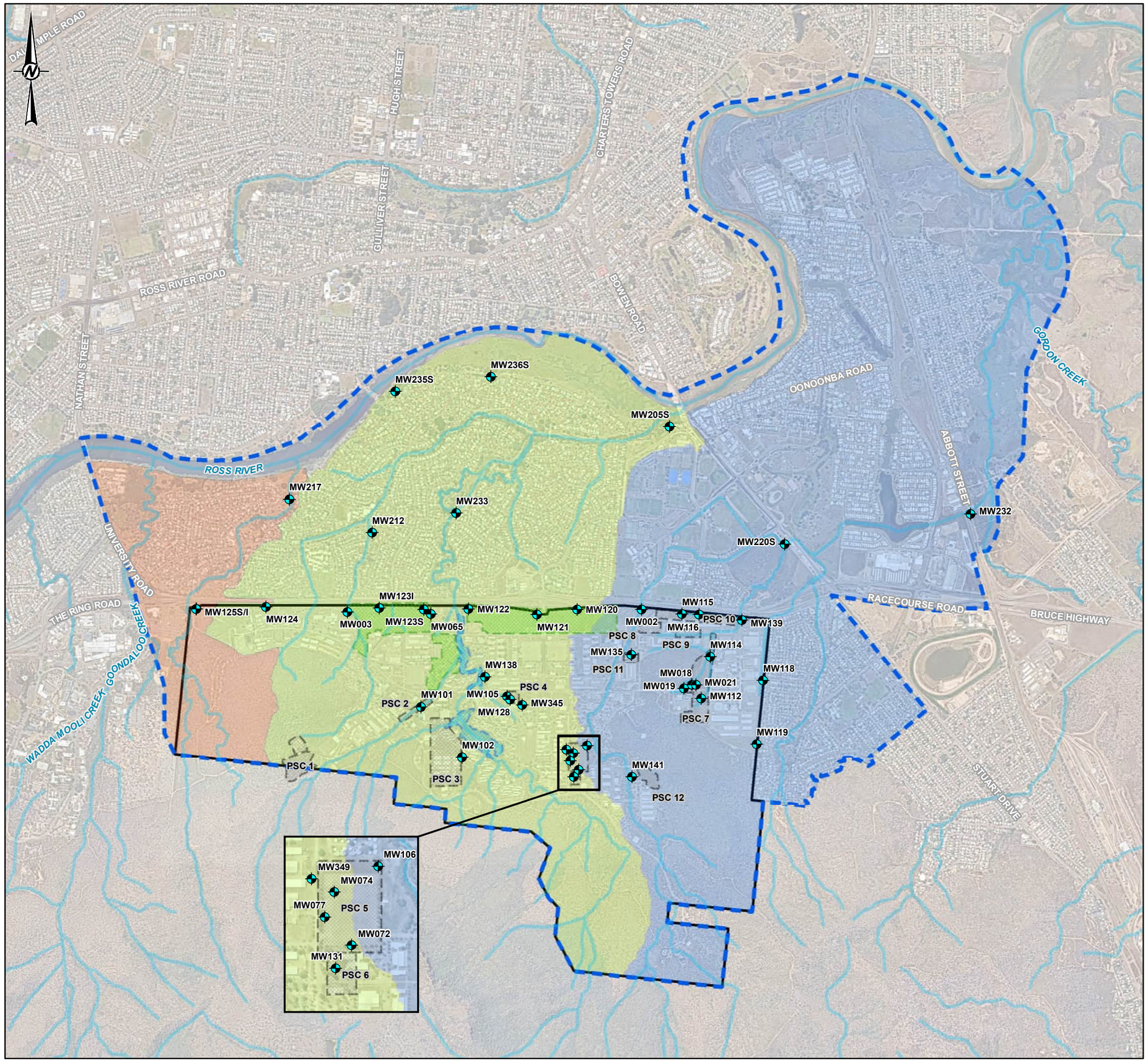

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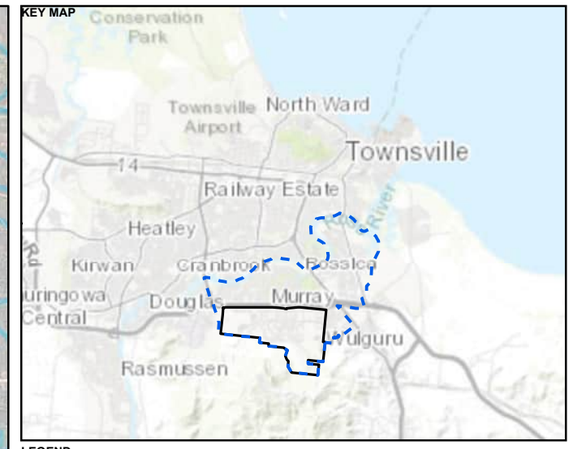

LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- Groundwater Sampling Location

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. MW226 LOCATED ON PRIVATE PROPERTY AND IS NOT DISPLAYED

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 19/12/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

TITLE
GROUNDWATER SAMPLING LOCATIONS

CONSULTANT

YYYY-MM-DD	2025-06-24
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.3

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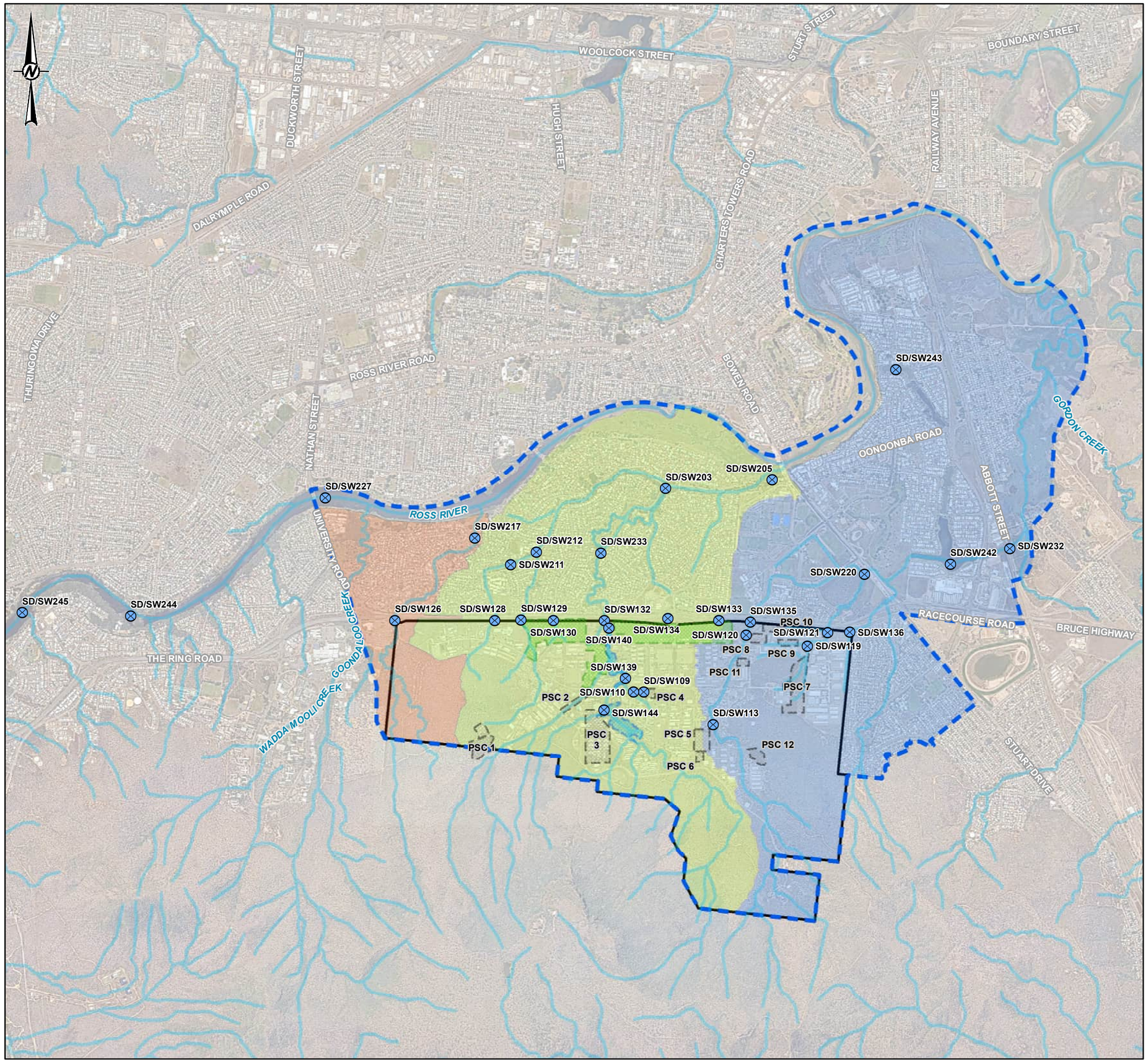

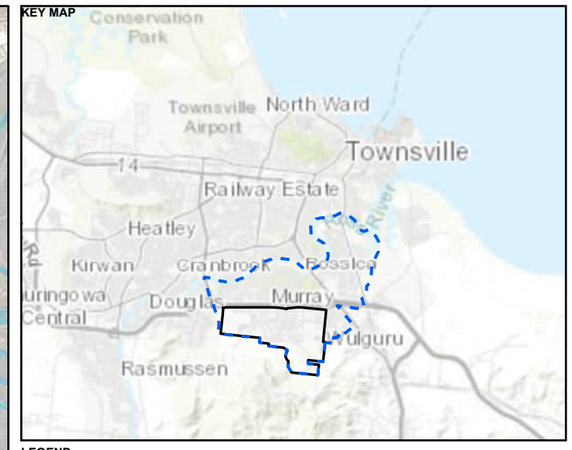

LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- Co-located Surface Water and Sediment Sampling Location

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 19/12/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

TITLE
SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS

CONSULTANT

YYYY-MM-DD	2025-06-24
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.4

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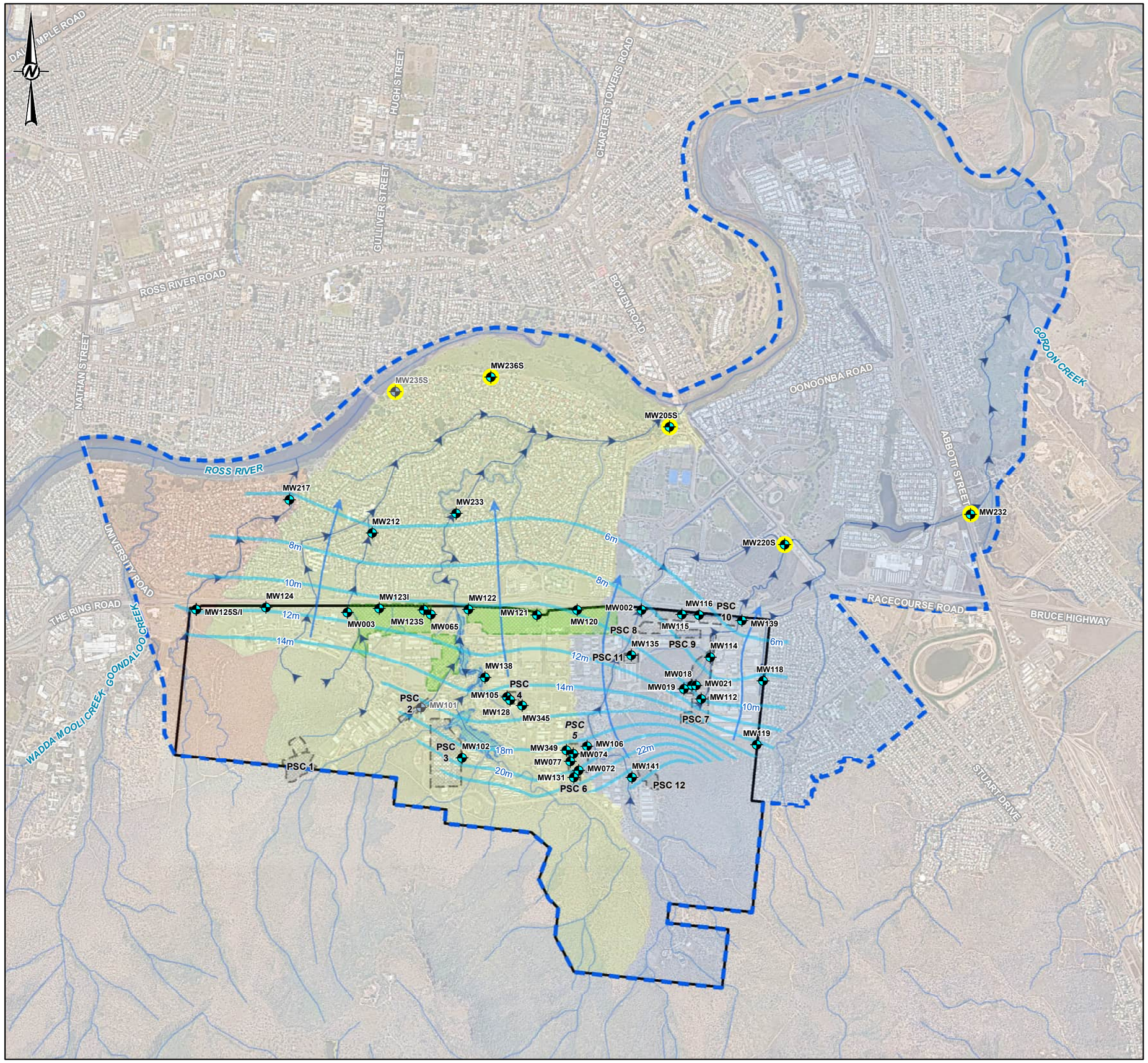

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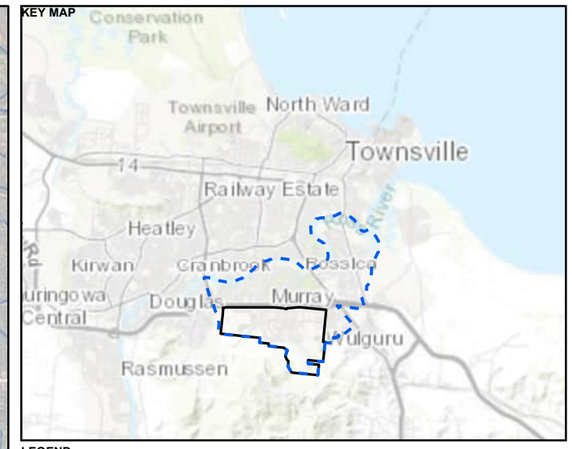

LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- October 2024 Gauging Location
- Groundwater Well Dry
- Tidally Influenced Location
- Groundwater Elevation Contour (m AHD)
- Inferred Groundwater Flow Direction
- Surface Water Flow Direction

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. MW226 LOCATED ON PRIVATE PROPERTY AND IS NOT DISPLAYED.
3. ONLY WELLS THAT ARE NOT TIDALLY INFLUENCED WERE USED TO CALCULATE GROUNDWATER ELEVATION. IN ADDITION, MONITORING WELLS MW019, MW077, MW226, MW139, AND MW014A WERE REMOVED FROM CALCULATIONS AS WATER LEVELS WERE RECORDED POST-SAMPLING.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

TITLE
OCTOBER 2024 SHALLOW GROUNDWATER ELEVATION CONTOURS AND FLOW DIRECTION

CONSULTANT
wsp

YYYY-MM-DD	2025-06-16
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.5

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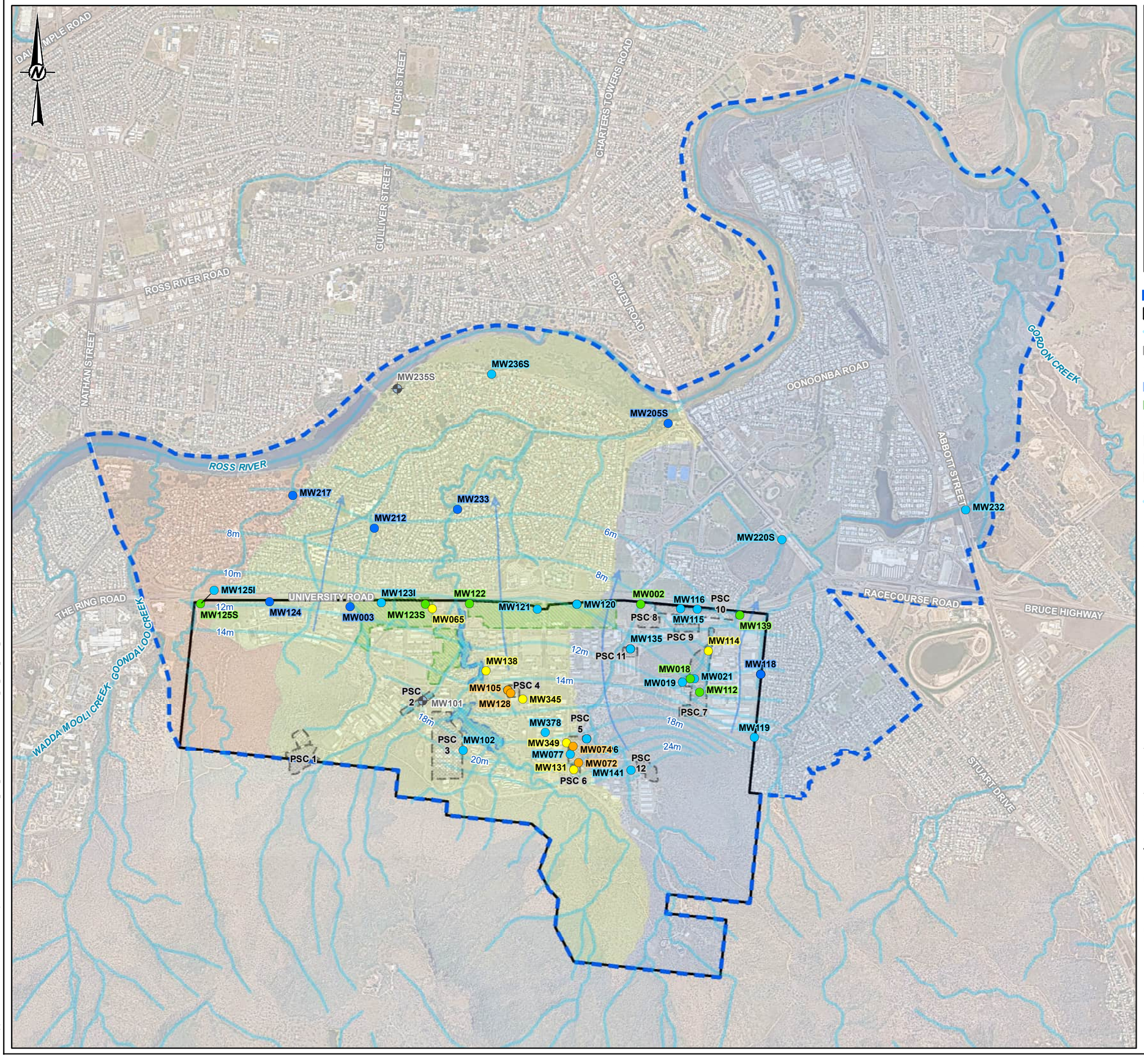

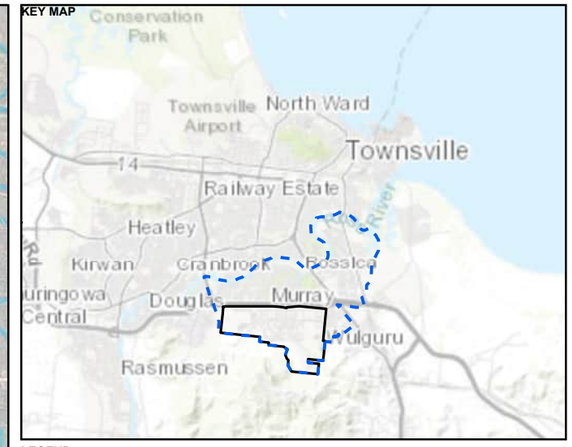

LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- October 2024 Shallow Groundwater Elevation Contour (m AHD)
- Inferred Groundwater Flow Direction

October 2024 Groundwater PFOS + PFHxS Result (ug/L)

- <0.07
- 0.07 - 2
- 2 - 10
- 10 - 50
- >50
- Groundwater Well Dry - Not Sampled This Round

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. THE MAXIMUM OF PRIMARY AND DUPLICATE RESULTS ARE DISPLAYED. REFER TO REPORT TABLES FOR THE FULL DATASET.
3. MW226 LOCATED ON PRIVATE PROPERTY AND IS NOT DISPLAYED

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

TITLE
OCTOBER 2024 GROUNDWATER PFOS + PFHxS RESULTS

CONSULTANT
wsp

YYYY-MM-DD	2025-06-24
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.6

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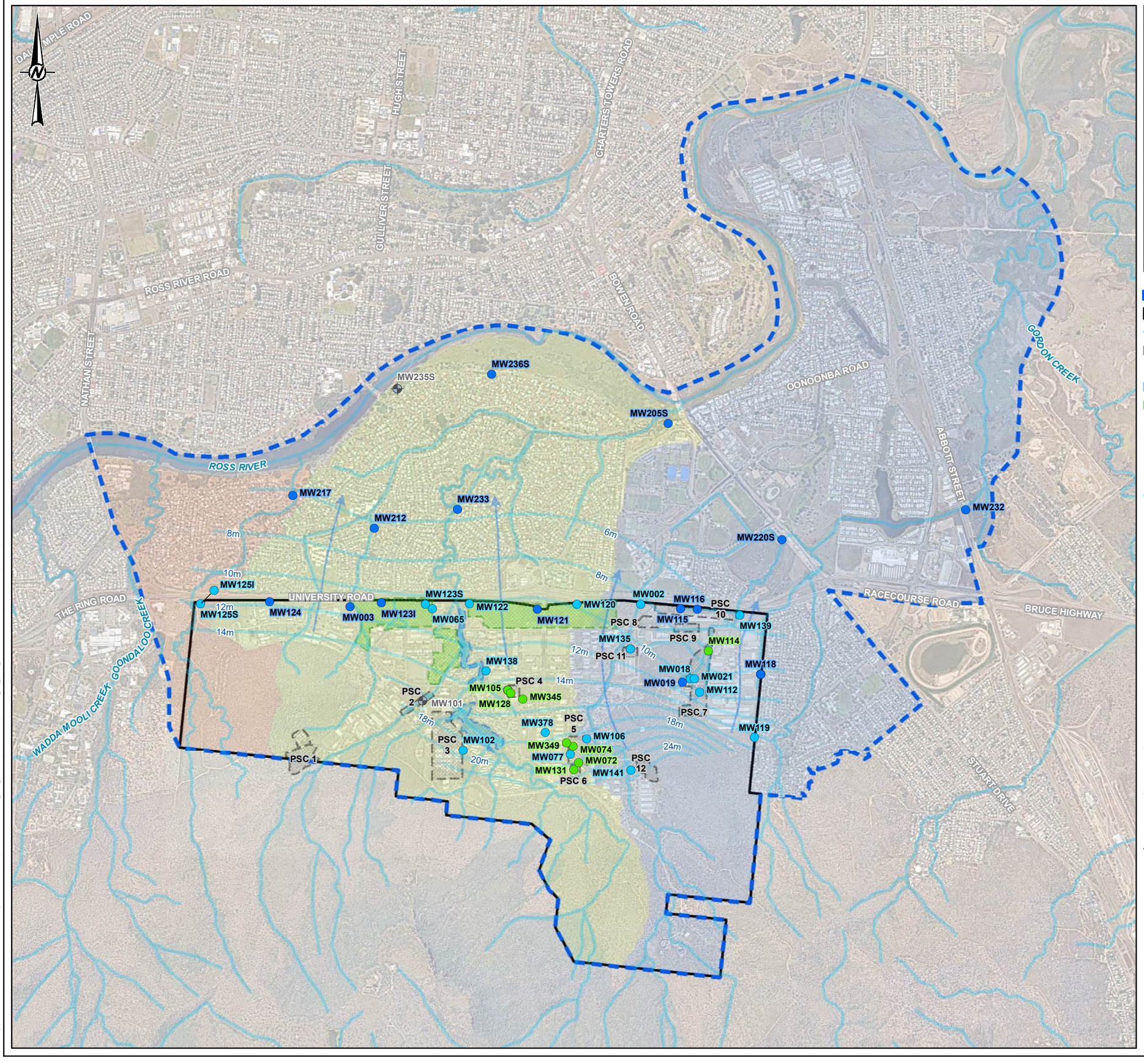

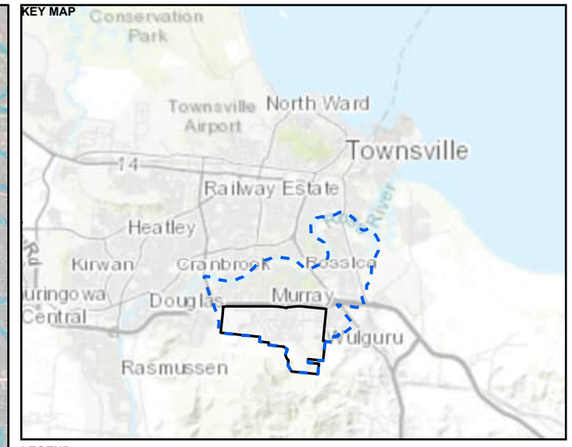

LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- October 2024 Shallow Groundwater Elevation Contour (m AHD)
- Inferred Groundwater Flow Direction

October 2024 Groundwater PFOA Result (ug/L)

- <LOR
- LOR - 0.56
- 0.56 - 10
- 10 - 50
- >50
- Groundwater Well Dry - Not Sampled This Round

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. THE MAXIMUM OF PRIMARY AND DUPLICATE RESULTS ARE DISPLAYED. REFER TO REPORT TABLES FOR THE FULL DATASET.
3. MW226 LOCATED ON PRIVATE PROPERTY AND IS NOT DISPLAYED

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

TITLE
OCTOBER 2024 GROUNDWATER PFOA RESULTS

CONSULTANT

YYYY-MM-DD	2025-06-24
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.7

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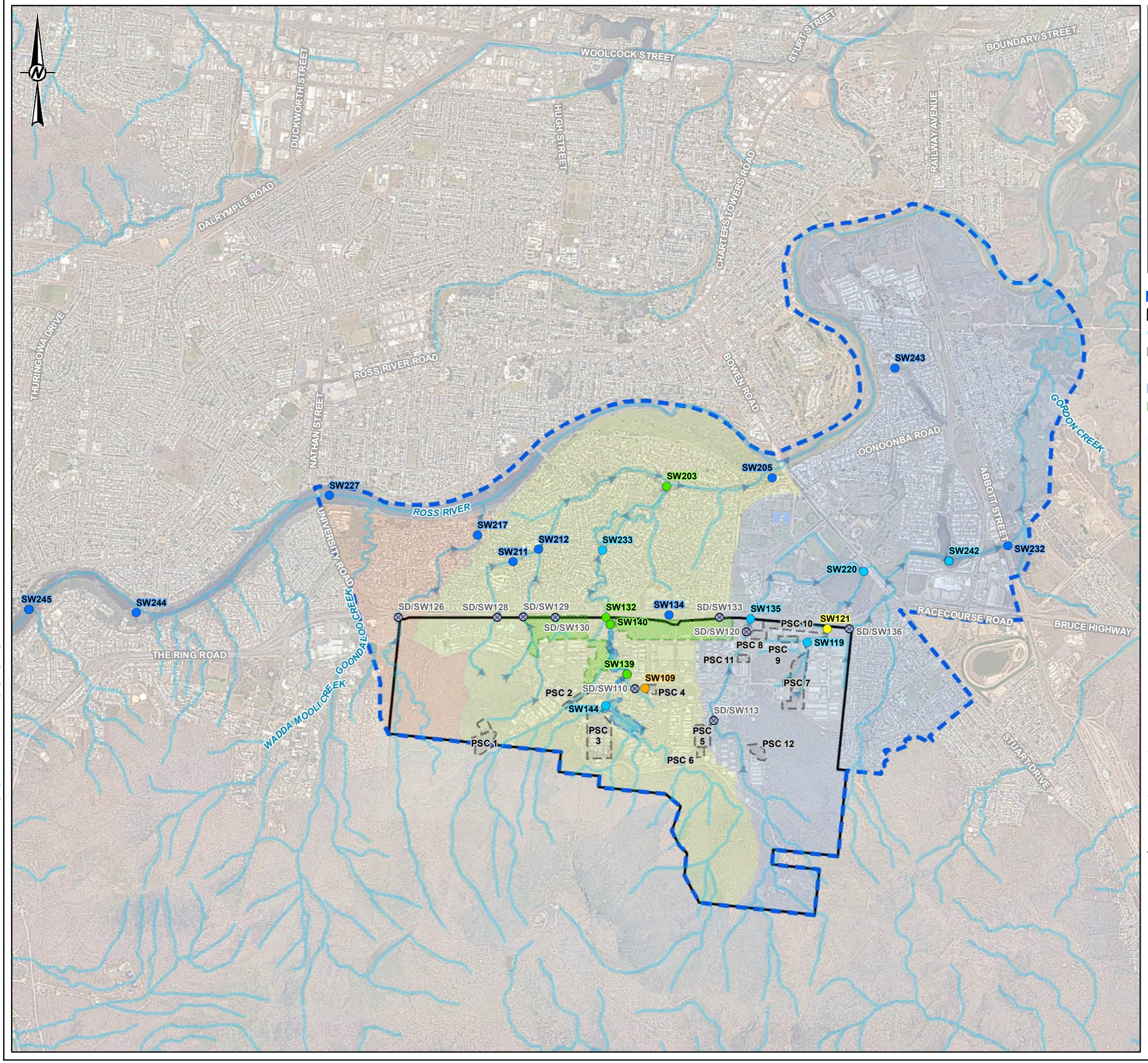
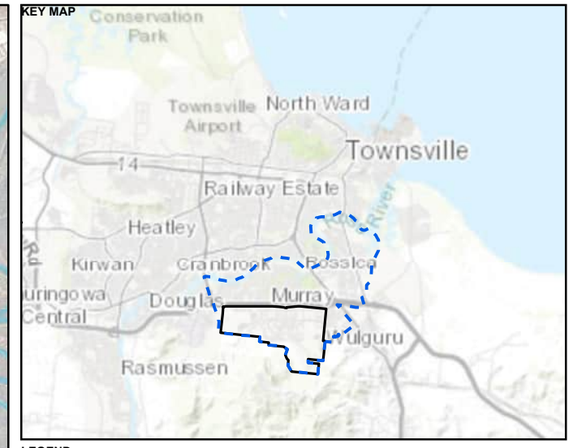


KEY MAP



LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- Surface Water Flow Direction

October 2024 Surface Water PFOS + PFHxS Result (ug/L)

- <0.07
- 0.07 - 2
- 2 - 10
- 10 - 50
- >50
- Location Dry - Sampled for Sediment Only

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. THE MAXIMUM OF PRIMARY AND DUPLICATE RESULTS ARE DISPLAYED. REFER TO REPORT TABLES FOR THE FULL DATASET.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

TITLE
OCTOBER 2024 SURFACE WATER PFOS + PFHxS RESULTS

CONSULTANT

YYYY-MM-DD	2025-06-24
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.8

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3

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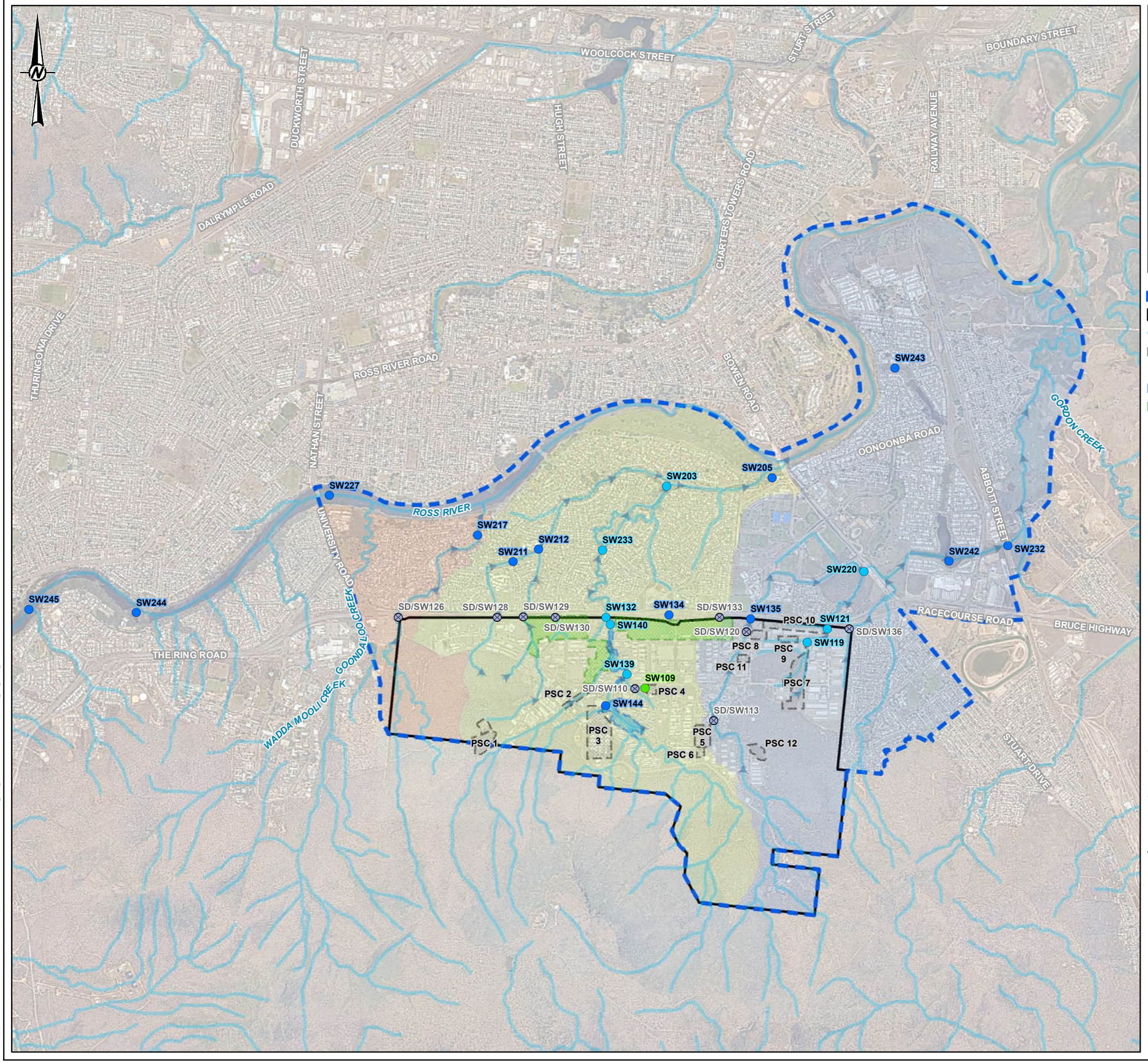
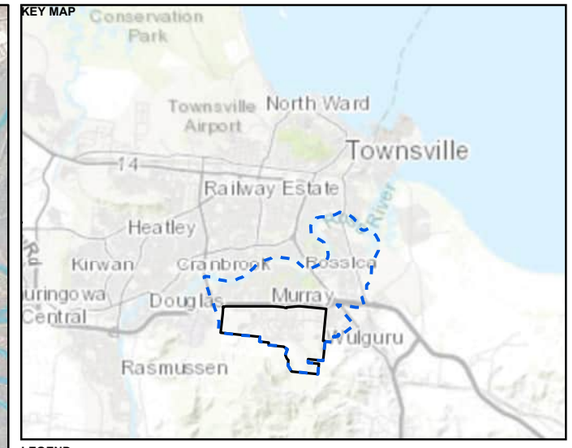




LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- Surface Water Flow Direction

October 2024 Surface Water PFOA Result (ug/L)

- <LOR
- LOR - 0.56
- 0.56 - 10
- 10 - 50
- >50
- Location Dry - Sampled for Sediment Only

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. THE MAXIMUM OF PRIMARY AND DUPLICATE RESULTS ARE DISPLAYED. REFER TO REPORT TABLES FOR THE FULL DATASET.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

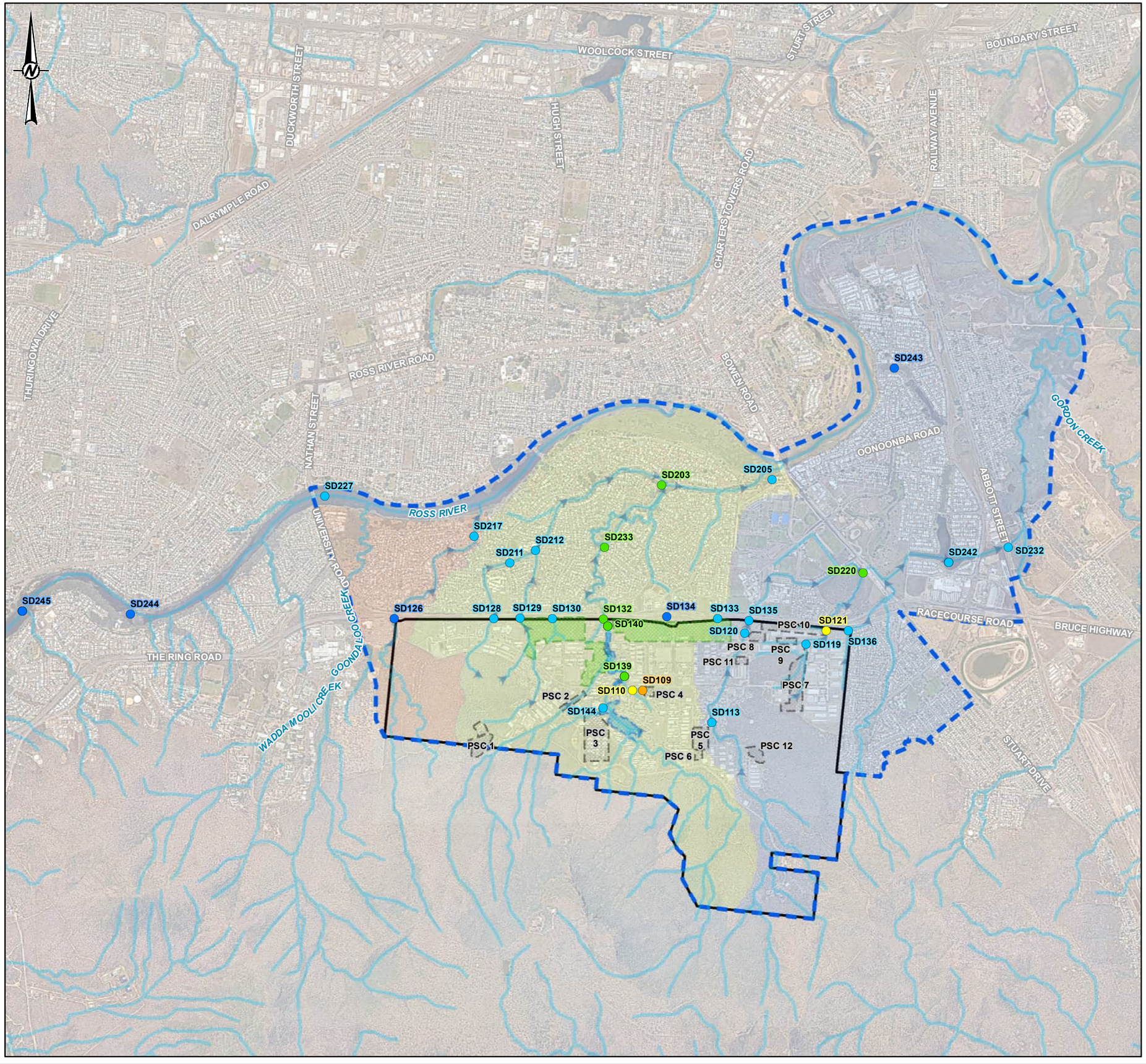
TITLE
OCTOBER 2024 SURFACE WATER PFOA RESULTS

CONSULTANT

YYYY-MM-DD	2025-06-24
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.9

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3
25mm
0
PATH: \\corp.pbwan.net\ANZ\Townsville\Golder\Melbourne\Corporate\Data\GIS\Jobs\2021\21456\04\Mxd\116-R_OMR_2024\PS129286-116-R-F00A3-Rev1_SW_PFOA_Results.mxd PRINTED ON: 2025-06-24 AT: 11:43:35 AM



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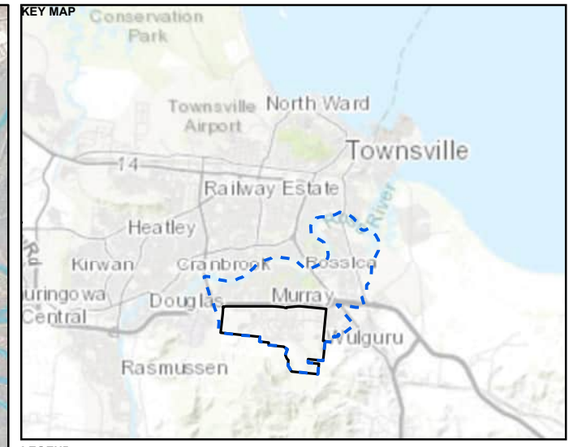


LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- Surface Water Flow Direction

October 2024 Sediment PFOS + PFHxS Result (mg/kg)

- <LOR
- LOR - 0.01
- 0.01 - 0.1
- 0.1 - 1
- >1

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. THE MAXIMUM OF PRIMARY AND DUPLICATE RESULTS ARE DISPLAYED. REFER TO REPORT TABLES FOR THE FULL DATASET.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

TITLE
OCTOBER 2024 SEDIMENT PFOS + PFHxS RESULTS

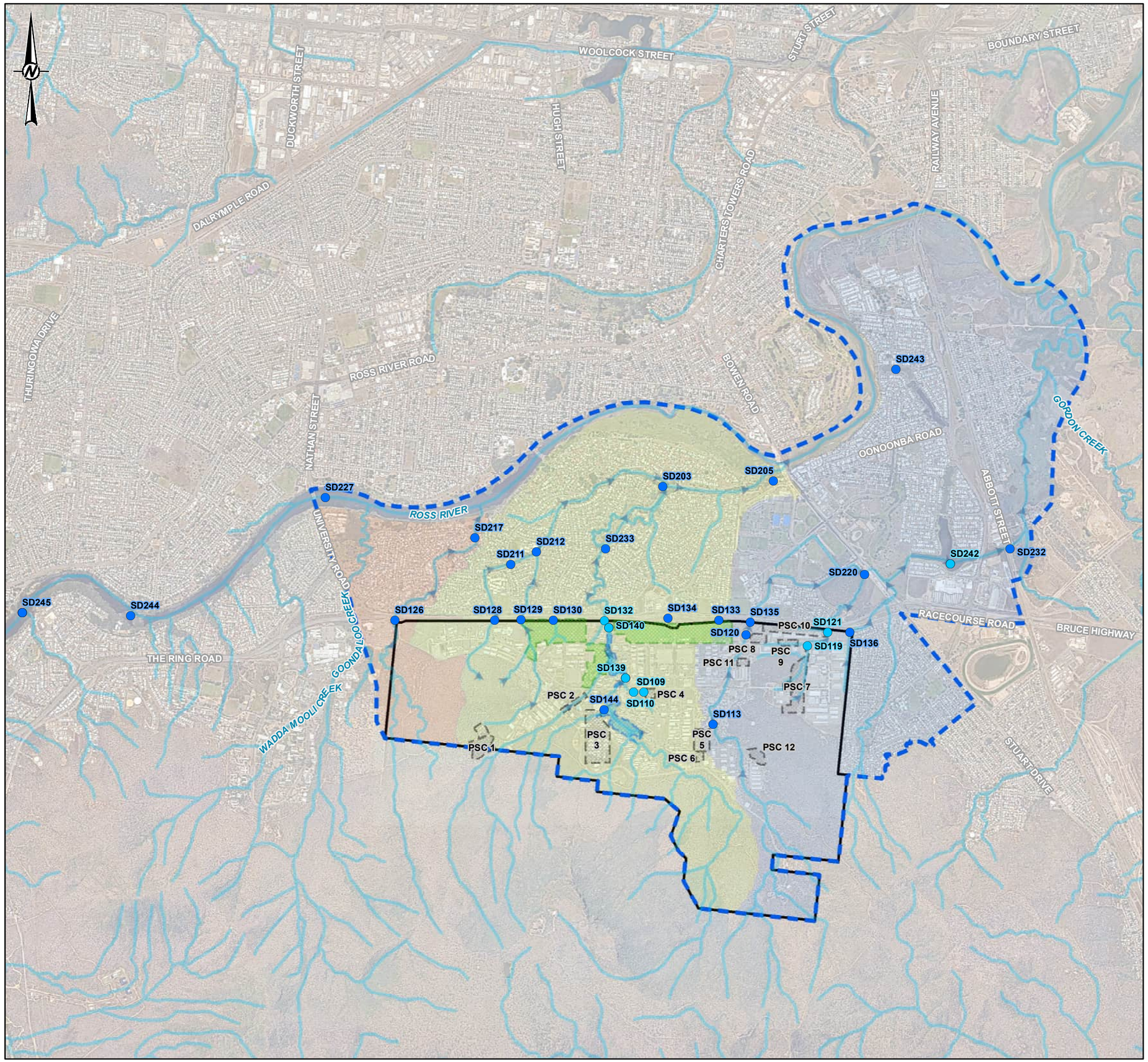
CONSULTANT
wsp

YYYY-MM-DD	2025-06-24
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.10

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3
0 25mm

PATH: \\corp.pbwan.net\ANZ\Transition\Golder\Melbourne\Complex\Data\GIS\Jobs\2021\21457048\Mxd\116-R_OMR_2024\PS129286-116-R-F00A10-Rev1_SD_PFOS_PFHxS_Results.mxd PRINTED ON: 2025-06-24 AT: 11:50:18 AM



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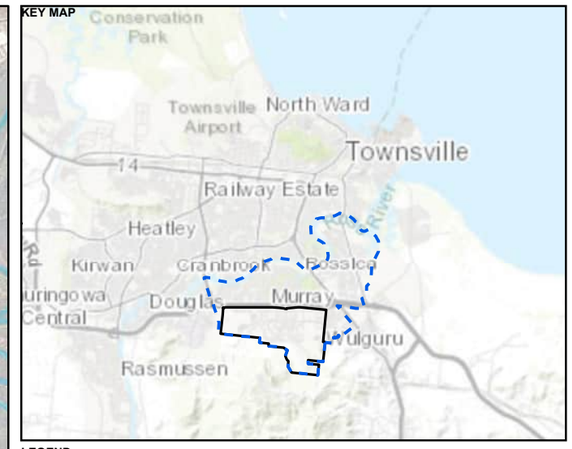

LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- Surface Water Flow Direction

October 2024 Sediment PFOA Result (mg/kg)

- <LOR
- LOR - 0.3
- 0.3 - 1
- 1 - 10
- >10

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. THE MAXIMUM OF PRIMARY AND DUPLICATE RESULTS ARE DISPLAYED. REFER TO REPORT TABLES FOR THE FULL DATASET.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

TITLE
OCTOBER 2024 SEDIMENT PFOA RESULTS

CONSULTANT
wsp

YYYY-MM-DD	2025-06-24
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.11

PATH: \\corp.pbwan.net\ANZ\Townsville\Golder\Melbourne\Complex\Data\GIS\Jobs\2021\21456\Mxd\116-R_OMR_2024\PS129286-116-R-F00A11-Rev1_SD_PFOA_Results.mxd PRINTED ON: 2025-06-24 AT: 11:45:00 AM
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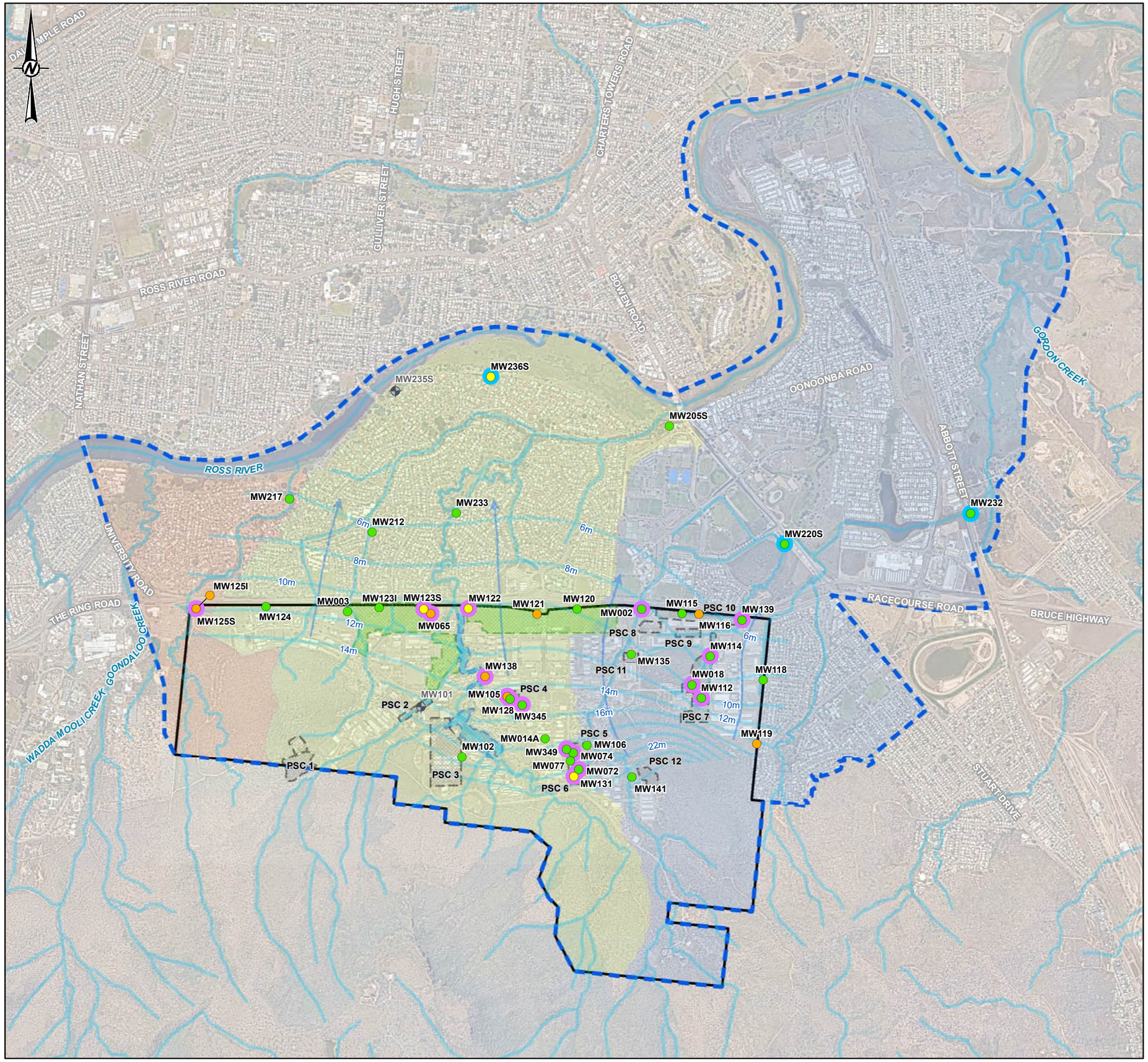
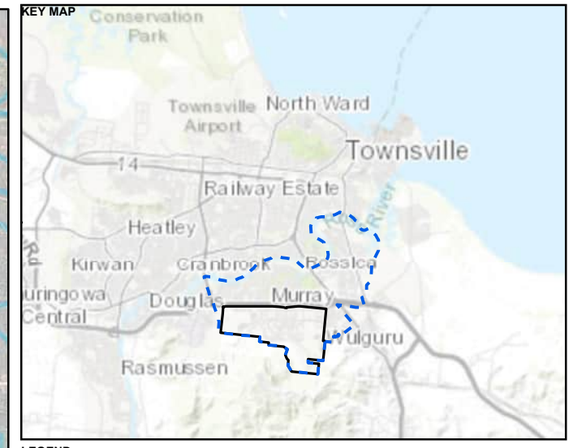
25mm
0



KEY MAP



LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- October 2024 Shallow Groundwater Elevation Contour (m AHD)
- Inferred Groundwater Flow Direction

October 2024 Groundwater Risk Classification

- Negligible potential for risk profile change
- Low potential for risk profile change
- Elevated potential for risk profile change

Relevant Guideline Exceedances

- Groundwater Result Exceeds PFAS NEMP 3.0 2025 Recreational Water
- Groundwater Result Exceeds PFAS NEMP 3.0 2025 Drinking Water (Offsite Only)
- Groundwater Well Dry - Not Sampled This Round

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55.
3. MW226 LOCATED ON PRIVATE PROPERTY AND IS NOT DISPLAYED

REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

TITLE
OCTOBER 2024 GROUNDWATER RISK CHARACTERISATION

CONSULTANT
wsp

YYYY-MM-DD	2025-06-24
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

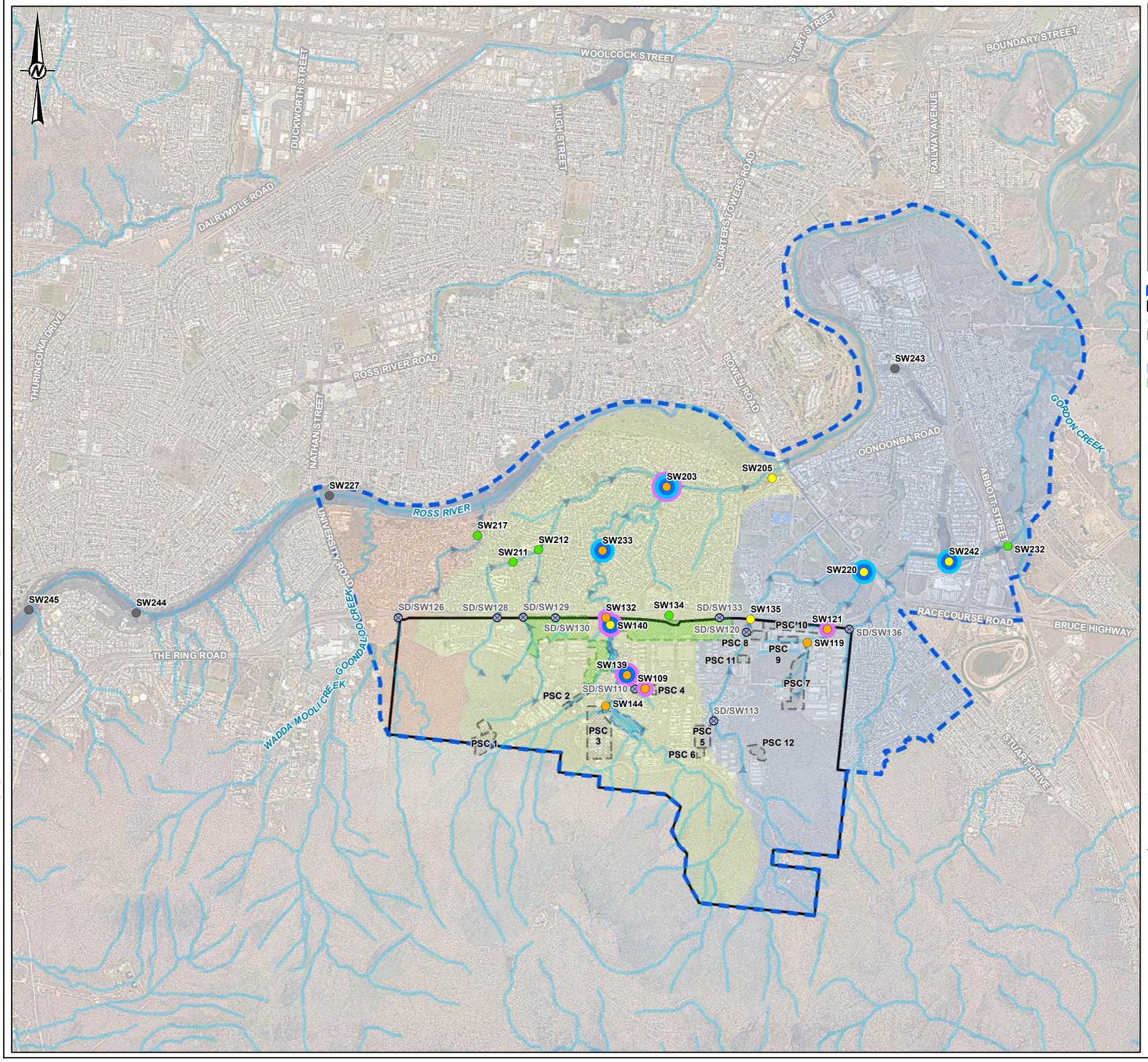
PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.12

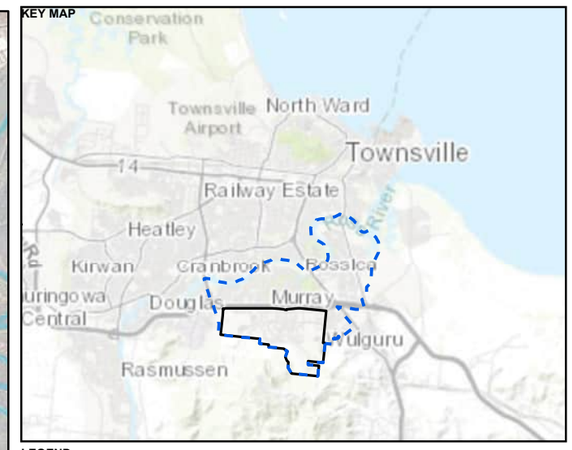
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3

25mm

0

PATH: \\corp.pbwan.net\ANZ\Townsville\Golder\Melbourne\Complex\Data\GIS\Jobs\2022\12145\5048\Mxd\116-R_OMR_2024\PS129286-116-R-F00A12-Rev1_GW_Screening_Results.mxd PRINTED ON: 2025-06-24 AT: 11:46:03 AM





LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East

October 2024 Surface Water Risk Classification

- Negligible potential for risk profile change
- Elevated potential for risk profile change
- Low potential for risk profile change
- Reference Location - No linkage to Base

Relevant Guideline Exceedances

- Surface Water Result Exceeds PFAS NEMP 3.0 2025 Recreational Water
- Surface Water Result Exceeds PFAS NEMP 3.0 2025 Drinking Water (Offsite Only)
- Surface Water Result Exceeds PFAS NEMP 3.0 2025 95% Eco Marine Water (Offsite and Dams Only)
- Location Dry - Sampled for Sediment Only

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING REPORT

TITLE
OCTOBER 2024 SURFACE WATER RISK CHARACTERISATION

CONSULTANT

YYYY-MM-DD	2025-06-24
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	116-R	C	A.13

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3
25mm
0

Appendix B

Tables

Table B.1
Groundwater gauging data and Field Parameters
October 2020 - October 2024
0229 Lavarack Barracks

Monitoring Zone	Location Code	Date	Depth to Water	TOC elevation	Groundwater Elevation	Dissolved Oxygen	Temp (Field)	Field Redox Measurements	Corrected Redox Potential*	Electrical Conductivity	pH
			m BTOC	m AHD	m AHD	mg/L	°C	mV	mV	µS/cm	
Eastern PFAS Contamination Area	MW018	28 Oct 2020	3.235	12.43	9.195	1.8	29.2	35.5	235.5	12,408	6.77
		31 Mar 2021	2.439	12.43	9.991	0.52	30.4	-144.2	55.8	24,824	6.98
		18 Aug 2021	3.112	12.43	9.318	0.77	25	-94	106.0	20,667	7.05
		02 Mar 2022	2.634	12.43	9.796	6.94	33.9	16.2	216.2	79.3	7.37
		25 Aug 2022	2.672	12.43	9.758	9.9	24.1	44.1	244.1	24,602	7.05
		09 Mar 2023	2.312	12.43	10.118	2.59	29	-41	159.0	10,565	6.9
		23 Aug 2023	3.819	12.43	8.611	0.71	29.3	136.7	336.7	22,831	6.95
		07 Mar 2024	2.215	12.43	10.215	0.55	29.8	59	259.0	20,779	7.05
		17 Oct 2024	3.000	12.43	9.43	0.67	28.2	-1.4	198.6	20,599	7.05
	MW112	16 Oct 2024	1.700	11.54	9.84	-	27.2	-370.6	-170.6	21,496	6.42
	MW114	28 Oct 2020	1.654	8.9	7.246	1.81	28.5	34.7	234.7	20,282	7.47
		31 Mar 2021	1.311	8.9	7.589	0.55	29.9	36.3	236.3	20,110	7.54
		18 Aug 2021	1.571	8.9	7.329	1.94	27.8	77.3	277.3	17,690	7.45
		02 Mar 2022	1.402	8.9	7.498	2.44	32.7	24.4	224.4	20,360	7.41
		24 Aug 2022	1.415	8.9	7.485	2.25	25.4	90.8	290.8	18,112	7.55
		09 Mar 2023	1.222	8.9	7.678	3.74	28.2	84.2	284.2	2,272	7.23
		23 Aug 2023	1.414	8.9	7.486	1.26	26.5	117.9	317.9	18,357	7.35
		07 Mar 2024	1.225	8.9	7.675	1.64	29.6	58.1	258.1	19,221	7.51
		16 Oct 2024	1.540	8.9	7.36	-	28.1	-458.9	-258.9	19,513	6.62
	MW115	28 Oct 2020	2.489	9.76	7.271	1.46	29.7	-57.5	142.5	1,379	7.55
		31 Mar 2021	1.991	9.76	7.769	0.23	29	76.5	276.5	966	8.06
		18 Aug 2021	2.258	9.76	7.502	0.42	27.6	-157.3	42.7	714	7.57
		02 Mar 2022	1.976	9.76	7.784	1.59	32.7	-194.2	5.8	953	7.24
		24 Aug 2022	1.020	9.76	8.74	0.57	25.8	-153.4	46.6	719	7.91
		08 Mar 2023	1.576	9.76	8.184	2.66	30.1	-102.3	97.7	676	7.15
		23 Aug 2023	2.086	9.76	7.674	0.52	26.9	-168.9	31.1	783	6.91
		08 Mar 2024	1.761	9.76	7.999	0.4	29	10.3	210.3	932	7.24
		16 Oct 2024	2.270	9.76	7.49	0.96	28.6	-65.8	134.2	817	7.17
	MW116	28 Oct 2020	2.137	8.61	6.473	2.38	29	74.8	274.8	16,977	7.24
		31 Mar 2021	1.634	8.61	6.976	0.88	27.1	200.1	400.1	15,779	7.18
		18 Aug 2021	1.916	8.61	6.694	2.8	27.2	228.8	428.8	14,891	7.42
		02 Mar 2022	1.635	8.61	6.975	3.28	31.4	132.6	332.6	15,493	7.25
		24 Aug 2022	1.665	8.61	6.945	0.81	26	60.3	260.3	16,302	7.16
		10 Mar 2023	1.178	8.61	7.432	2.25	32.7	116.2	316.2	15,012	6.94
		23 Aug 2023	1.709	8.61	6.901	1.67	27.3	206.1	406.1	12,148	7.06
		08 Mar 2024	1.257	8.61	7.353	1.62	29.5	37.9	237.9	12,991	7.25
		16 Oct 2024	1.940	8.61	6.67	1.22	28.5	20.2	220.2	9,222	7.03
	MW139	28 Oct 2020	1.776	6.53	4.754	1.65	29	70.5	270.5	10,204	6.76
		31 Mar 2021	1.034	6.53	5.496	0.36	33.9	31.4	231.4	11,009	6.79
		18 Aug 2021	1.580	6.53	4.95	3.19	27	53.2	253.2	4,655	6.8
		02 Mar 2022	1.135	6.53	5.395	0.25	30.1	150.7	350.7	10,854	6.43
		25 Aug 2022	2.425	6.53	4.105	6.9	26.3	57.7	257.7	8,402	6.78
		09 Mar 2023	1.006	6.53	5.524	2.67	29.7	-34.1	165.9	7,134	6.75
		23 Aug 2023	1.425	6.53	5.105	0.55	27.7	-77.8	122.2	9,315	6.65
		08 Mar 2024	0.902	6.53	5.628	0.64	30.2	21.6	221.6	5,903	6.84
		16 Oct 2024	4.520	6.53	2.01	16.43	28.9	-489.8	-289.8	6,338	6.31
Former B Squadron	MW135	28 Oct 2020	4.533	14.96	10.427	2.44	30.5	40.2	240.2	3,545	6.51
		31 Mar 2021	3.389	14.96	11.571	0.96	32.8	68.2	268.2	1,381	6.63
		18 Aug 2021	4.306	14.96	10.654	1.23	27.2	41.4	241.4	2,964	6.59
		02 Mar 2022	3.935	14.96	11.025	2.71	32.2	86.5	286.5	2,642	6.57
		24 Aug 2022	4.155	14.96	10.805	0.58	28.1	64	264.0	3,634	6.61
		09 Mar 2023	2.951	14.96	12.009	3.45	31.2	66.7	266.7	1,449	6.73
		23 Aug 2023	4.191	14.96	10.769	0.44	29.5	92.3	292.3	3,685	6.42
		07 Mar 2024	3.109	14.96	11.851	2.58	31.9	13	213.0	1,215	6.67
		16 Oct 2024	4.335	14.96	10.625	1.07	30.2	13.5	213.5	3,764	6.61
Former Fire Station	MW105	29 Oct 2020	2.830	17.166	14.336	2.01	28.5	20.9	220.9	4,765	6.34
		31 Mar 2021	1.914	17.166	15.252	0.13	29.9	60.3	260.3	4,503	7.13
		18 Aug 2021	2.500	17.166	14.666	0.83	27.2	100.1	300.1	3,845	7.18
		03 Mar 2022	2.090	17.166	15.076	3.02	30.6	92.8	292.8	3,985	7.11
		24 Aug 2022	2.215	17.166	14.951	0.69	26.4	56.7	256.7	4,933	7.29
		09 Mar 2023	2.471	17.166	14.695	2.81	28.7	100.5	300.5	3,904	7.09
		23 Aug 2023	2.262	17.166	14.904	0.76	27.3	104.8	304.8	4,909	7.06
		07 Mar 2024	1.455	17.166	15.711	0.7	29.6	34.5	234.5	4,320	7.15
		16 Oct 2024	2.320	17.166	14.846	1.72	28.4	-29.4	170.6	2,500	7.19
	MW128	29 Oct 2020	3.192	17.556	14.364	3.52	27.2	51.4	251.4	53.3	6.79
		31 Mar 2021	2.244	17.556	15.312	0.23	29.1	43.5	243.5	1,400	7.45
		18 Aug 2021	2.850	17.556	14.706	0.64	25.9	77.6	277.6	1,142	7.64
		03 Mar 2022	2.432	17.556	15.124	2.32	30.9	-153.2	46.8	267.8	7.53
		24 Aug 2022	2.555	17.556	15.001	0.66	24.9	56.5	256.5	795	7.71
		09 Mar 2023	1.772	17.556	15.784	6.22	27.8	81.3	281.3	346	6.82
		23 Aug 2023	2.501	17.556	15.055	0.42	26.5	101.8	301.8	2,297	7.35
		07 Mar 2024	1.702	17.556	15.854	0.82	29.1	31.1	231.1	2,215	7.45
		12 Jul 2022	-	-	-	0.3	25.2	123.1	323.1	250.5	7.41
		16 Oct 2024	2.850	17.556	14.706	0.66	27.4	-170.2	29.8	435.5	7.36
	MW345	17 Jan 2022	-	-	-	0.88	29.2	46.9	246.9	3,909	7.37
		19 May 2022	-	-	-	3	29.5	-84.2	115.8	3,543	7.27
		16 Oct 2024	3.120	18.309	15.189	4.06	27.6	-55.6	144.4	1,733	7.42

Table B.1
Groundwater gauging data and Field Parameters
October 2020 - October 2024
0229 Lavarack Barracks

Monitoring Zone	Location Code	Date	Depth to Water	TOC elevation	Groundwater Elevation	Dissolved Oxygen	Temp (Field)	Field Redox Measurements	Corrected Redox Potential*	Electrical Conductivity	pH
			m BTOC	m AHD	m AHD	mg/L	°C	mV	mV	µS/cm	
Former Fire Training Area	MW131	28 Oct 2020	5.432	25.146	19.714	2.8	29.1	-21.2	178.8	1,402	6.77
		31 Mar 2021	3.321	25.146	21.825	0.2	26.9	-8.1	191.9	1,229	6.8
		19 Aug 2021	4.285	25.146	20.861	0.86	24.5	93.7	293.7	1,049	6.77
		03 Mar 2022	3.711	25.146	21.435	1.79	31.2	-18.3	181.7	1,380	6.6
		26 Aug 2022	4.310	25.146	20.836	5.27	22.8	180	380.0	2,246	6.4
		09 Mar 2023	2.307	25.146	22.839	2.38	27.8	-68.2	131.8	1,216	6.7
		23 Aug 2023	3.777	25.146	21.369	0.78	27.6	118.6	318.6	1,289	6.7
		07 Mar 2024	2.628	25.146	22.518	1.02	28.1	51	251.0	555	6.92
		16 Oct 2024	4.490	25.146	20.656	1.41	27.5	43.1	243.1	690	6.99
Former Helicopter Squadron	MW102	29 Oct 2020	4.433	22.87	18.437	2.85	29.6	44.7	244.7	6,134	6.55
		31 Mar 2021	3.690	22.87	19.18	0.28	28	62.3	262.3	3,350	8.68
		18 Aug 2021	4.175	22.87	18.695	1.89	26.8	64.1	264.1	9,119	7.45
		03 Mar 2022	3.565	22.87	19.305	2.25	30.8	75.4	275.4	13,977	6.85
		24 Aug 2022	3.692	22.87	19.178	0.89	25.7	90.1	290.1	10,251	7.4
		09 Mar 2023	3.086	22.87	19.784	4.38	27.2	20.4	220.4	21.6	7.57
		23 Aug 2023	3.737	22.87	19.133	0.85	28.9	39.5	239.5	9,916	7.26
		07 Mar 2024	3.094	22.87	19.776	0.72	29.2	39	239.0	587	7.5
		16 Oct 2024	3.990	22.87	18.88	1.22	28.7	-95.5	104.5	1,783	8.29
Lavarack Golf Course and Sporting Fields	MW065	29 Oct 2020	2.760	13.42	10.66	1.56	29.7	36.3	236.3	4,534	6.69
		31 Mar 2021	1.487	13.42	11.933	2.69	28.7	-15.6	184.4	2,597	7.82
		18 Aug 2021	2.405	13.42	11.015	3.91	27.3	66.6	266.6	2,715	7.99
		03 Mar 2022	1.762	13.42	11.658	1.02	30.8	119.1	319.1	2,772	7.6
		25 Aug 2022	1.990	13.42	11.43	0.95	24.5	54.5	254.5	2,307	7.67
		08 Mar 2023	1.304	13.42	12.116	2.58	28.7	-55.7	144.3	1,217	7.89
		23 Aug 2023	2.304	13.42	11.116	0.7	28.7	96.5	296.5	5,319	7.52
		08 Mar 2024	1.019	13.42	12.401	0.54	29.7	19.2	219.2	1,059	7.36
		16 Oct 2024	2.540	13.42	10.88	0.64	27.8	-74.3	125.7	2,858	7.7
	MW120	29 Oct 2020	3.844	13.32	9.476	2.63	29	29.5	229.5	13,269	5.84
		31 Mar 2021	3.056	13.32	10.264	0.48	28.6	-103.2	96.8	4,032	7.04
		18 Aug 2021	3.589	13.32	9.731	3.41	25.3	4.9	204.9	10,168	6.79
		02 Mar 2022	3.111	13.32	10.209	0.87	29.2	130.9	330.9	6,754	7.38
		24 Aug 2022	3.316	13.32	10.004	0.93	26.8	53.7	253.7	8,193	7.02
		08 Mar 2023	2.556	13.32	10.764	2.81	28	-74	126.0	2,353	7.26
		23 Aug 2023	3.345	13.32	9.975	1.7	26.8	-5.2	194.8	4,505	6.87
		08 Mar 2024	2.296	13.32	11.024	0.99	28.2	23.5	223.5	1,547	7.22
		16 Oct 2024	3.540	13.32	9.78	7.77	25.5	-132.5	67.5	4,031	7.13
	MW121	29 Oct 2020	3.373	13.67	10.297	3.41	28	14.6	214.6	8,597	6.72
		31 Mar 2021	2.522	13.67	11.148	0.74	28.3	31.5	231.5	8,351	7.33
		18 Aug 2021	3.154	13.67	10.516	4.06	25.2	50.2	250.2	6,498	7.47
		03 Mar 2022	2.731	13.67	10.939	0.46	27.8	134.7	334.7	8,500	7.23
		24 Aug 2022	2.925	13.67	10.745	0.91	24.3	73	273.0	6,960	7.49
		08 Mar 2023	2.066	13.67	11.604	2.84	27.3	-2.9	197.1	8,436	7.18
		23 Aug 2023	2.858	13.67	10.812	0.91	26.8	112.1	312.1	7,192	7.26
		08 Mar 2024	2.015	13.67	11.655	1.01	28.4	30.3	230.3	6,815	7.38
	MW122	29 Oct 2020	4.906	14.44	9.534	3.02	27.8	44.5	244.5	1,529	6.3
		31 Mar 2021	3.903	14.44	10.537	1.29	27.3	-88.5	111.5	516	6.89
		18 Aug 2021	4.626	14.44	9.814	2.36	27.2	-100.3	99.7	4,628	7.15
		03 Mar 2022	4.136	14.44	10.304	0.45	28.2	144.2	344.2	2,258	6.99
		24 Aug 2022	4.313	14.44	10.127	0.68	25.9	41.6	241.6	2,156	6.98
		08 Mar 2023	3.535	14.44	10.905	3.08	28.3	-59.1	140.9	967	7
		23 Aug 2023	4.462	14.44	9.978	0.96	27.1	98	298.0	2,799	6.8
		08 Mar 2024	3.986	14.44	10.454	1.85	27.6	17.3	217.3	197.9	6.85
		16 Oct 2024	4.630	14.44	9.81	5.19	23.3	-69.3	130.7	4,030	7.33
	MW123I	28 Oct 2020	2.780	14.04	11.26	1.44	27.5	48.3	248.3	26,700	6.79
		31 Mar 2021	2.427	14.04	11.613	2.15	28.2	-53.9	146.1	16,993	6.71
		18 Aug 2021	2.639	14.04	11.401	2.9	25.1	-7.3	192.7	481.2	6.77
		03 Mar 2022	2.778	14.04	11.262	0.5	27.8	148.8	348.8	28,661	7.02
		24 Aug 2022	2.720	14.04	11.32	0.75	24.3	73.9	273.9	25,070	6.78
		08 Mar 2023	2.186	14.04	11.854	4.09	27.7	84.9	284.9	221.2	6.86
		23 Aug 2023	2.761	14.04	11.279	0.85	27.5	99.1	299.1	26,924	6.56
		08 Mar 2024	2.746	14.04	11.294	1.13	27.8	26.9	226.9	26,471	6.79
		16 Oct 2024	3.085	14.04	10.955	0.93	27.1	-30.8	169.2	12,688	6.88
	MW123S	29 Oct 2020	2.911	13.48	10.569	2.01	28.2	6	206.0	2,180	6.95
		31 Mar 2021	1.593	13.48	11.887	1.49	28.1	-80.6	119.4	4,139	7.59
		18 Aug 2021	2.592	13.48	10.888	3.5	24.6	51.9	251.9	3,597	7.74
		03 Mar 2022	1.998	13.48	11.482	1.85	29.4	120.8	320.8	4,695	7.26
		25 Aug 2022	2.245	13.48	11.235	1.5	25.4	56.1	256.1	3,797	7.44
		08 Mar 2023	1.383	13.48	12.097	3.6	27.7	-62.6	137.4	13,641	7.08
		23 Aug 2023	2.565	13.48	10.915	0.95	27.3	67.5	267.5	3,871	7.43
		08 Mar 2024	0.962	13.48	12.518	0.65	28.2	15.1	215.1	2,272	7.28
		16 Oct 2024	3.033	13.48	10.447	1.5	25.9	-75	125.0	1,872	7.95

Table B.1
Groundwater gauging data and Field Parameters
October 2020 - October 2024
0229 Lavarack Barracks

Monitoring Zone	Location Code	Date	Depth to Water	TOC elevation	Groundwater Elevation	Dissolved Oxygen	Temp (Field)	Field Redox Measurements	Corrected Redox Potential*	Electrical Conductivity	pH
			m BTOC	m AHD	m AHD	mg/L	°C	mV	mV	µS/cm	
Monocell	MW014A	20 Apr 2020	5.530	23.055	17.525	2.85	28.9	116.6	316.6	2,004	7.59
		02 Mar 2021	5.131	23.055	17.924	2.84	28.4	-	-	2,049	9.3
		22 Feb 2022	5.245	23.055	17.810	2.2	29.4	136.9	336.9	1,964	6.85
		27 May 2022	5.060	23.055	17.995	0.01	28.3	134.6	334.6	1,924	6.81
		01 Mar 2023	3.605	23.055	19.450	1.75	28.7	27.8	227.8	2,107	7.07
		12 Jul 2022	-	-	-	0.7	26.9	-142.8	57.2	2,009	6.72
		16 Oct 2024	5.630	23.055	17.425	-	29.6	-267.8	-67.8	1,257	5.53
	MW072	02 Mar 2021	-	-	-	2.59	30.3	-	-	2,275	8.54
		31 Mar 2021	4.650	25.41	20.76	0.67	28.5	77.2	277.2	2,067	6.89
		20 Aug 2021	5.212	25.41	20.198	2.53	28.7	-13.5	186.5	2,626	7
		22 Feb 2022	-	-	-	1.42	31.4	77.2	277.2	2,021	6.87
		03 Mar 2022	4.854	25.41	20.556	1.97	32.3	64.9	264.9	2,005	6.71
		25 Aug 2022	5.715	25.41	19.695	7.8	27.2	51.1	251.1	2,095	7.9
		01 Mar 2023	-	-	-	1.67	31.7	62.7	262.7	452	6.7
		09 Mar 2023	3.549	25.41	21.861	3.53	28.9	11.7	211.7	1,615	7.01
		23 Aug 2023	4.908	25.41	20.502	0.72	29.4	106.2	306.2	2,003	6.82
		07 Mar 2024	4.072	25.41	21.338	0.84	30.3	42.2	242.2	1,842	6.9
		16 Oct 2024	5.400	25.41	20.01	-	30.2	-363.3	-163.3	1,595	6.29
	MW074	28 Oct 2020	4.967	23.28	18.313	2.31	31	96.4	296.4	1,980	6.93
		02 Mar 2021	-	-	-	3.81	30.3	-	-	2,056	10.29
		31 Mar 2021	3.441	23.28	19.839	0.26	29.8	82	282.0	1,996	7.03
		19 Aug 2021	4.151	23.28	19.129	1.33	27.4	127.6	327.6	1,757	7.13
		22 Feb 2022	-	-	-	7.29	33.6	88.9	288.9	2,213	7.96
		03 Mar 2022	3.742	23.28	19.538	1.7	34.1	110.1	310.1	2,143	-
		25 Aug 2022	3.615	23.28	19.665	6.5	28.2	51.9	251.9	2,440	7.09
		07 Mar 2023	2.591	23.28	20.689	1.68	32	59.6	259.6	2,048	7.1
		09 Mar 2023	-	-	-	2	30.8	58.8	258.8	1,940	7.02
		23 Aug 2023	3.795	23.28	19.485	0.69	31.4	117.8	317.8	2,741	7.12
		07 Mar 2024	3.113	23.28	20.167	0.69	31.6	59.1	259.1	2,194	7.07
		16 Oct 2024	4.350	23.28	18.93	1.1	31.9	35.8	235.8	2,665	7.08
	MW077	07 Mar 2023	-	-	-	1.92	30.1	-84.3	115.7	943	7.23
		16 Oct 2024	4.380	23.665	19.285	0.71	31.3	-323.5	-123.5	1,022	6.95
	MW106	28 Oct 2020	5.855	23.822	17.967	2.33	28.2	73.3	273.3	1,987	7.08
		31 Mar 2021	4.354	23.822	19.468	1.3	28.1	73.8	273.8	1,747	7.09
		18 Aug 2021	5.208	23.822	18.614	2.28	26.9	96.3	296.3	2,580	6.93
		03 Mar 2022	4.685	23.822	19.137	3.66	36.5	202.3	402.3	2,916	6.61
		25 Aug 2022	4.665	23.822	19.157	3	25.5	50.9	250.9	2,237	7.07
		09 Mar 2023	3.642	23.822	20.180	4.22	28.5	61	261.0	1,963	7.1
		23 Aug 2023	4.757	23.822	19.065	1.65	26.7	121.7	321.7	2,425	6.89
		07 Mar 2024	3.942	23.822	19.880	4.4	28.6	55	255.0	2,164	7.12
		16 Oct 2024	5.340	23.822	18.482	-	27.9	-345.7	-145.7	1,819	6.29
	MW349	08 Jun 2022	-	-	-	0.49	28.9	212.7	412.7	1,682	7.28
		12 Jul 2022	-	-	-	0.34	27.7	82.7	282.7	1,676	7.19
		16 Oct 2024	4.290	22.872	18.582	-	29.1	-264.7	-64.7	2,092	6.17
Stockpile Designated Area 2	MW141	28 Oct 2020	4.884	28.190	23.306	3.02	27.8	60.2	260.2	1,714	6.73
		31 Mar 2021	2.178	28.190	26.012	0.39	28.5	64.1	264.1	1,568	6.68
		17 Aug 2021	3.447	28.190	24.743	2.48	27.5	55.9	255.9	1,386	6.92
		03 Mar 2022	2.485	28.190	25.705	3.53	30.6	117.9	317.9	1,500	6.72
		24 Aug 2022	2.683	28.190	25.507	1.41	26.6	70.5	270.5	1,604	6.7
		09 Mar 2023	2.756	28.190	25.434	3.07	28.8	105.6	305.6	1,431	6.69
		23 Aug 2023	2.810	28.190	25.380	0.49	27.5	131	331.0	1,532	6.61
		07 Mar 2024	1.542	28.190	26.648	0.84	29.2	45.3	245.3	1,468	6.72
		16 Oct 2024	3.220	28.190	24.970	1.37	27.6	-34.4	165.6	715	6.91
Suspected AFFF Disposal Area	MW101	29 Oct 2020	5.000	21.230	16.230	2.05	29.4	-66.4	133.6	1,928	5.99
		31 Mar 2021	3.003	21.230	18.227	0.09	28.9	-9.7	190.3	1,245	6.51
		18 Aug 2021	4.339	21.230	16.891	1.18	28.3	-167.5	32.5	1,254	6.69
		03 Mar 2022	3.545	21.230	17.685	3.11	31	-84.6	115.4	2,585	6.54
		24 Aug 2022	4.090	21.230	17.140	0.67	27.6	-3.5	196.5	2,012	6.61
		09 Mar 2023	2.781	21.230	18.449	2.91	28	-49.2	150.8	4.9	6.45
		23 Aug 2023	3.986	21.230	17.244	0.5	28.5	-127.4	72.6	1,240	6.6
		07 Mar 2024	2.653	21.230	18.577	0.88	29.2	41.4	241.4	284	6.44
Top, Middle and Lower Dams	MW138	29 Oct 2020	4.083	16.448	12.365	2.76	27	30.9	230.9	38.1	6.27
		31 Mar 2021	3.121	16.448	13.327	0.24	28.7	-4.7	195.3	3,527	6.95
		18 Aug 2021	3.743	16.448	12.705	2.12	25.8	81.9	281.9	3,174	7.17
		03 Mar 2022	3.210	16.448	13.238	2.66	30.8	-15.7	184.3	1,708	6.82
		24 Aug 2022	3.388	16.448	13.060	0.7	26.8	59.3	259.3	3,576	7.08
		09 Mar 2023	2.816	16.448	13.632	3.67	27	218.8	418.8	3,055	6.92
		23 Aug 2023	3.443	16.448	13.005	1.11	28	118.3	318.3	3,724	6.93
		07 Mar 2024	2.845	16.448	13.603	0.71	28.5	38.2	238.2	3,384	6.92
		16 Oct 2024	3.654	16.448	12.794	0.53	28.7	67.4	267.4	3,646	6.97

Table B.1
Groundwater gauging data and Field Parameters
October 2020 - October 2024
0229 Lavarack Barracks

Monitoring Zone	Location Code	Date	Depth to Water	TOC elevation	Groundwater Elevation	Dissolved Oxygen	Temp (Field)	Field Redox Measurements	Corrected Redox Potential*	Electrical Conductivity	pH
			m BTOC	m AHD	m AHD	mg/L	°C	mV	mV	µS/cm	
Base Boundary	MW002	28 Oct 2020	2.507	11.350	8.843	6.95	27.6	70.3	270.3	689	7.29
		02 Mar 2021	-	-	-	3.24	28.9	-	-	726	7.61
		31 Mar 2021	2.155	11.350	9.195	0.32	28.6	46.9	246.9	857	6.93
		19 Aug 2021	2.661	11.350	8.689	1.01	25.7	131	331.0	2,208	6.95
		21 Feb 2022	-	-	-	2.21	30.9	133.6	333.6	684	7.02
		02 Mar 2022	2.218	11.350	9.132	0.7	29.1	141.7	341.7	1,106	6.99
		25 Aug 2022	2.398	11.350	8.952	18.2	23.3	55.1	255.1	3,310	6.96
		01 Mar 2023	-	-	-	1.95	28.7	42.8	242.8	1,282	7.25
		08 Mar 2023	2.146	11.350	9.204	2.94	28.4	16.8	216.8	2,841	7.17
		23 Aug 2023	2.395	11.350	8.955	1.23	25.1	202.9	402.9	867	6.76
		08 Mar 2024	2.164	11.350	9.186	1.13	29.5	23.01	223.0	565	7
		16 Oct 2024	2.978	11.350	8.372	0.7	27.3	37.5	237.5	7,506	7.2
	MW003	29 Oct 2020	3.696	14.108	10.412	2.36	27.3	7.5	207.5	3,751	6.43
		02 Mar 2021	-	-	-	2.2	27.9	-	-	6,218	7.36
		31 Mar 2021	3.143	14.108	10.965	1.4	28.4	-134.8	65.2	5,985	7.1
		18 Aug 2021	3.440	14.108	10.668	3.81	27.7	59.1	259.1	6,710	7.29
		22 Feb 2022	-	-	-	4.19	27.6	77.6	277.6	6,982	7.1
		03 Mar 2022	3.519	14.108	10.589	0.49	29	127.8	327.8	9,119	7.26
		24 Aug 2022	3.580	14.108	10.528	0.87	25.9	62.7	262.7	6,569	7.21
		02 Mar 2023	-	-	-	5.67	28	-25.9	174.1	6,382	8.09
		08 Mar 2023	3.019	14.108	11.089	2.69	27.3	-19.4	180.6	6,385	7.28
		23 Aug 2023	3.632	14.108	10.476	0.58	27.2	-23.8	176.2	8,400	7.03
		08 Mar 2024	3.276	14.108	10.832	1.65	28.2	27.6	227.6	7,690	7.3
		16 Oct 2024	3.873	14.108	10.235	0.52	28.1	-77.6	122.4	7,950	7.06
	MW117D	28 Oct 2020	1.922	5.95	4.028	3.2	27.9	57.2	257.2	8,431	6.79
		30 Mar 2021	1.044	5.95	4.906	1.72	30.4	-83.1	116.9	8,695	6.68
		17 Aug 2021	2.020	5.95	3.93	0.91	27.5	-96.1	103.9	10,934	6.72
		15 Feb 2022	-	5.950	-	3.37	37	52.8	252.8	10,987	7.1
	MW117S	28 Oct 2020	1.870	5.96	4.09	2.22	28.2	29.4	229.4	9,351	7.61
		30 Mar 2021	0.941	5.96	5.019	3.33	29.3	19.6	219.6	7,942	7.48
		17 Aug 2021	1.570	5.96	4.39	1.53	26.3	61.5	261.5	9,655	7.71
	MW118	28 Oct 2020	2.078	10.54	8.462	2.56	27.8	54	254.0	6,156	7.24
		30 Mar 2021	1.334	10.54	9.206	2.17	29.6	85	285.0	3,952	7.31
		17 Aug 2021	1.884	10.54	8.656	0.44	27.4	87.5	287.5	6,469	7.22
		15 Feb 2022	1.927	10.54	8.613	2.64	30.4	121.9	321.9	5,324	7.23
		24 Aug 2022	1.765	10.54	8.775	0.69	25.9	49.6	249.6	5,775	7.22
		09 Mar 2023	1.262	10.54	9.278	1.35	28	-5.7	194.3	4,964	7.54
		23 Aug 2023	1.986	10.54	8.554	0.81	27	42.6	242.6	5,137	7.22
		08 Mar 2024	1.181	10.54	9.359	2.69	32.8	88.7	288.7	5,242	7.34
		16 Oct 2024	2.094	10.54	8.446	-	28.3	-231.6	-31.6	4,657	6.74
	MW119	28 Oct 2020	4.788	18.78	13.992	2.48	27.3	82.4	282.4	10,420	6.46
		30 Mar 2021	3.273	18.78	15.507	1.95	29.2	96.8	296.8	7,823	6.74
		17 Aug 2021	5.363	18.78	13.417	0.52	25.5	225.5	425.5	9,385	6.81
		15 Feb 2022	3.722	18.78	15.058	2.26	29.3	202.8	402.8	7,090	6.75
		24 Aug 2022	3.845	18.78	14.935	0.83	27.9	62.6	262.6	6,376	7.12
		07 Mar 2023	2.472	18.78	16.308	2.31	28.3	75.2	275.2	4,166	7.05
		23 Aug 2023	4.060	18.78	14.72	0.47	27.3	100.8	300.8	4,821	6.89
		07 Mar 2024	3.301	18.78	15.479	2.64	29	30	230.0	4,379	7.16
		16 Oct 2024	4.421	18.78	14.359	-	28	-257.3	-57.3	5,392	6.81
	MW124	02 Nov 2020	3.335	14.41	11.075	1.68	29.7	40	240.0	27,891	6.52
		31 Mar 2021	3.016	14.41	11.394	5.62	28.1	23.3	223.3	26,214	6.92
		17 Aug 2021	3.096	14.41	11.314	0.9	28.4	51.4	251.4	29,866	7.06
		15 Feb 2022	2.884	14.41	11.526	0.85	29.4	144.5	344.5	25,624	6.48
		24 Aug 2022	2.791	14.41	11.619	0.91	26.2	76.2	276.2	25,085	6.99
		08 Mar 2023	2.188	14.41	12.222	3.58	29	-45.6	154.4	11,323	6.91
		23 Aug 2023	2.592	14.41	11.818	0.81	28.7	6.9	206.9	26,299	6.72
		08 Mar 2024	2.249	14.41	12.161	0.98	28.9	23.9	223.9	20,714	6.85
		16 Oct 2024	2.700	14.41	11.71	-	27.6	-213.4	-13.4	23,000	6.08
	MW125I	02 Nov 2020	5.727	16.67	10.943	1.45	28.6	73.2	273.2	3,591	6.59
		31 Mar 2021	4.839	16.67	11.831	7.26	27.3	17.4	217.4	3,906	7.33
		17 Aug 2021	5.425	16.67	11.245	1.08	28.6	86	286.0	4,207	6.88
		02 Mar 2022	5.220	16.67	11.45	-	28.6	161.4	361.4	3,384	6.69
		24 Aug 2022	4.958	16.67	11.712	11.9	26	123	323.0	4,111	6.88
		08 Mar 2023	3.984	16.67	12.686	2.59	28.9	93.4	293.4	26	6.56
		23 Aug 2023	4.812	16.67	11.858	0.7	28.3	65.9	265.9	5,319	6.53
		08 Mar 2024	4.000	16.670	12.67	0.82	28.1	31.7	231.7	6,070	6.98
		16 Oct 2024	4.967	16.67	11.703	-	27.9	-210.3	-10.3	6,727	6.45
	MW125S	02 Nov 2020	5.604	16.680	11.076	2.3	27.5	112.5	312.5	3,879	6.71
		31 Mar 2021	4.845	16.680	11.835	6.95	27.8	185.3	385.3	4,298	6.96
		17 Aug 2021	5.270	16.680	11.410	1.35	27.7	65.2	265.2	4,902	7.16
		01 Mar 2022	4.933	16.680	11.747	2.48	28.7	155.2	355.2	4,272	6.7
		24 Aug 2022	4.850	16.680	11.830	2.1	24.2	171.6	371.6	3,500	7.14
		08 Mar 2023	3.886	16.680	12.794	5.28	28.4	168.1	368.1	3,760	6.91
		23 Aug 2023	4.741	16.680	11.939	2.08	31	44.8	244.8	5,013	6.87
		08 Mar 2024	3.308	16.680	13.372	3.04	28.2	24.6	224.6	4,018	7.1
		16 Oct 2024	4.920	16.680	11.760	-	27.5	-188.8	11.2	4,075	6.14

Table B.1
Groundwater gauging data and Field Parameters
October 2020 - October 2024
0229 Lavarack Barracks

Monitoring Zone	Location Code	Date	Depth to Water	TOC elevation	Groundwater Elevation	Dissolved Oxygen	Temp (Field)	Field Redox Measurements	Corrected Redox Potential*	Electrical Conductivity	pH
			m BTOC	m AHD	m AHD	mg/L	ºC	mV	mV	µS/cm	
Off-Base	MW205S	03 Nov 2020	5.797	6.4	0.603	2.31	28.6	-67.3	132.7	220.3	6.21
		31 Mar 2021	5.168	6.4	1.232	1.73	27.6	47	247.0	27,488	6.51
		19 Aug 2021	5.905	6.4	0.495	5.3	25.4	229.6	429.6	12,110	6.38
		02 Mar 2022	5.373	6.4	1.027	0.57	28.7	130.3	330.3	28,337	6.31
		24 Aug 2022	5.824	6.4	0.576	0.67	27	-99.8	100.2	28,320	6.55
		08 Mar 2023	5.125	6.4	1.275	0.87	29.4	35.7	235.7	27,891	6.89
		23 Aug 2023	5.925	6.4	0.475	2.26	26.3	64.3	264.3	26,663	6.77
		07 Mar 2024	4.933	6.4	1.467	0.74	28.7	68.7	268.7	27,580	6.8
		16 Oct 2024	5.410	6.4	0.99	1.73	28.7	91.1	291.1	16,043	7.05
	MW212	03 Nov 2020	2.158	8.31	6.152	1.81	28.6	28.1	228.1	25,835	6.44
		31 Mar 2021	1.619	8.31	6.691	2.16	27.8	-34	166.0	20,597	6.93
		18 Aug 2021	2.094	8.31	6.216	0.99	25.3	-83.8	116.2	10,913	7.08
		03 Mar 2022	1.728	8.31	6.582	0.26	29	122.8	322.8	9,713	7.11
		24 Aug 2022	1.891	8.31	6.419	1.47	23.9	-117.7	82.3	5,174	7.23
		07 Mar 2023	1.327	8.31	6.983	2.64	27.5	-141.5	58.5	12,877	7.17
		23 Aug 2023	1.961	8.31	6.349	1.73	25.9	45.1	245.1	1,447	6.84
		07 Mar 2024	1.419	8.31	6.891	5.79	29	62.8	262.8	6,239	7.05
		16 Oct 2024	2.108	8.31	6.202	0.86	28.9	-171.9	28.1	12,423	7.02
	MW217	03 Nov 2020	1.136	7.35	6.214	1.77	26.8	26.2	226.2	6,495	5.87
		31 Mar 2021	0.831	7.35	6.519	2.23	26.5	-11.9	188.1	11,001	6.08
		18 Aug 2021	1.060	7.35	6.29	2.86	24.7	39.3	239.3	10,963	6.19
		03 Mar 2022	0.943	7.35	6.407	0.65	28.3	124.8	324.8	13,166	6.3
		23 Aug 2022	0.990	7.35	6.36	0.85	22.7	41.1	241.1	11,013	5.68
		08 Mar 2023	0.708	7.35	6.642	3.53	28.9	11.7	211.7	1,615	7.01
		23 Aug 2023	1.982	7.35	5.368	2.18	24.6	15.2	215.2	11,742	6.18
		07 Mar 2024	0.590	7.35	6.76	0.61	29.8	15	215.0	5,181	6.48
		16 Oct 2024	1.067	7.35	6.283	1.23	27.4	-65.5	134.5	6,043	6.35
	MW220S	03 Nov 2020	1.990	3.75	1.76	1.44	27.3	50.2	250.2	37,387	5.76
		01 Apr 2021	1.624	3.75	2.126	2.52	26.2	26.8	226.8	35,655	6.61
		18 Aug 2021	2.159	3.75	1.591	2.74	25.1	51	251.0	32,869	6.53
		03 Mar 2022	1.773	3.75	1.977	0.56	29.1	134.9	334.9	45,840	6.47
		24 Aug 2022	1.658	3.75	2.092	0.3	24.2	-66.9	133.1	40,290	6.43
		07 Mar 2023	1.425	3.75	2.325	2.33	29.6	-10.6	189.4	34,834	6.24
		23 Aug 2023	1.711	3.75	2.039	1.48	24.8	14.8	214.8	29,539	6.06
		07 Mar 2024	1.233	3.75	2.517	0.86	28.4	55.8	255.8	38,503	6.35
		16 Oct 2024	1.700	3.75	2.05	0.86	27.7	-80.7	119.3	39,004	6.49
	MW226	29 Oct 2020	1.358	-	-	1.97	26.2	30.8	230.8	17,449	5.81
		30 Mar 2021	0.689	-	-	2.67	26.3	-40.9	159.1	11,043	6.41
		19 Aug 2021	1.179	-	-	0.72	22.3	214.9	414.9	13,807	6.74
		28 Feb 2022	0.901	-	-	-	30	186.2	386.2	15,201	5.88
		25 Aug 2022	1.020	-	-	0.91	21.5	141.2	341.2	17,828	6.85
		08 Mar 2023	0.725	-	-	3.05	28	-51.3	148.7	7,032	6.73
		23 Aug 2023	0.724	-	-	3.34	25.1	-77.6	122.4	11,471	6.8
		08 Mar 2024	0.285	-	-	0.75	27.8	-1.3	198.7	10,387	6.92
		16 Oct 2024	0.985	-	-	-	26.6	-221.3	-21.3	16,174	6.75
	MW232	03 Nov 2020	0.565	2.31	1.745	1.53	29.1	31.7	231.7	51,290	5.5
		31 Mar 2021	0.491	2.31	1.819	1.49	28.9	-74.2	125.8	42,007	6.47
		20 Aug 2021	0.600	2.31	1.71	3.25	25.6	-72.9	127.1	37,926	6.23
		02 Mar 2022	0.561	2.31	1.749	0.36	30.8	149.2	349.2	51,132	6.39
		24 Aug 2022	0.465	2.31	1.845	0.69	24.5	-22	178.0	42,048	6.63
		09 Mar 2023	0.270	2.31	2.04	1.53	28.2	-52.7	147.3	35,058	6.65
		23 Aug 2023	0.632	2.31	1.678	1.82	24.7	6.7	206.7	29,788	6.51
		07 Mar 2024	0.309	2.31	2.001	0.5	29.7	78.4	278.4	41,687	6.25
		16 Oct 2024	0.492	2.31	1.818	0.26	27.9	-98.9	101.1	36,324	6.31
	MW233	03 Nov 2020	1.813	6.87	5.057	1.83	26.6	11.1	211.1	5,834	6.6
		31 Mar 2021	0.821	6.87	6.049	3.25	28.1	17.6	217.6	5,619	6.74
		18 Aug 2021	1.574	6.87	5.296	0.97	24.1	72.6	272.6	5,588	6.95
		03 Mar 2022	0.922	6.87	5.948	0.42	29	152.5	352.5	6,726	6.67
		24 Aug 2022	1.000	6.870	5.87	1.02	24.3	35.1	235.1	5,811	7.03
		07 Mar 2023	0.637	6.87	6.233	2.44	27.6	23.4	223.4	5,781	6.92
		23 Aug 2023	1.148	6.87	5.722	1.97	25.3	19.2	219.2	1,901	7.16
		07 Mar 2024	0.586	6.87	6.284	0.83	28	65.1	265.1	6,173	6.97
		16 Oct 2024	1.450	6.87	5.42	1.01	27.8	-44	156.0	3,153	6.93
	MW235S	03 Nov 2020	5.498	7.08	1.582	1.66	27.7	-22.8	177.2	1,565	6.06
		31 Mar 2021	5.564	7.08	1.516	1.76	27.8	-70.1	129.9	1,874	6.64
		18 Aug 2021	5.372	7.08	1.708	2.86	26	-54.4	145.6	1,387	6.82
		03 Mar 2022	5.105	7.08	1.975	0.31	29.9	80.5	280.5	2,166	6.41
		25 Aug 2022	-	7.080	-	8.3	22.6	-129.8	70.2	1,782	6.51
		08 Mar 2023	4.838	7.08	2.242	0.51	27.8	-132.1	67.9	1,053	6.72
		23 Aug 2023	5.314	7.08	1.766	2.29	27.3	73.9	273.9	1,417	6.6
		07 Mar 2024	4.982	7.08	2.098	0.75	28.7	28.2	228.2	1,802	6.63
	MW236S	03 Nov 2020	5.809	6.53	0.721	7.93	27.6	80.7	280.7	7.4	5.92
		31 Mar 2021	4.503	6.53	2.027	4.9	28.5	66.1	266.1	520	6.32
		19 Aug 2021	4.961	6.53	1.569	0.85	24.2	136.2	336.2	1,594	6.32
		03 Mar 2022	4.620	6.53	1.91	3.19	28.4	222.6	422.6	491.5	6.42
		24 Aug 2022	4.796	6.53	1.734	1.44	27	106.4	306.4	875	7.03
		08 Mar 2023	4.273	6.53	2.257	1.44	28.9	8.2	208.2	1,348	6.73
		23 Aug 2023	4.953	6.53	1.577	2.02	26.1	-32.1	167.9	1,135	6.53
		07 Mar 2024	4.446	6.53	2.084	1.25	29.3	55.4	255.4	1,193	6.46
		16 Oct 2024	5.060	6.53	1.47	1.56	27	48	248.0	2,992	7.4

Notes:
mbtoc = metres below top of casing
mAHD = metres above Australia Height Datum
mg/L = milligrams per litre
µS/cm = microsiemens per centimetre
mV = millivolt
ºC = degrees Celsius
- = data not available
* = Corrected Redox Potential was converted to a standard hydrogen electrode value by using the following equation (Corrected Redox Potential = measured YSI ORP + 200; YSI Environmental, 2005), assuming a field temperature of 22ºC.

Table B.2
Groundwater Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																																
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							0.56	0.07	0.07	0.07																										
PFAS NEMP 3.0 2025 Recreational Water**							10	2	2	2																										
PFAS NEMP 3.0 2025 95% Eco Marine Water***							220	0.13																												
Monitoring Zone	Location Code	Date	Sample Type																																	
Eastern PFAS Contamination Area	MW018	28 Oct 2020	Normal	<0.10	<0.25	<0.10	1.12	22.1	15.3	37.4	49.8	53.7	0.8	5.61	0.78	<0.10	1.09	<0.10	<0.25	<0.10	<0.10	<0.10	1.11	2.79	2.97	<0.10	<0.10	<0.10	<0.10	<0.25	<0.25	<0.25	<0.10	<0.10
		28 Oct 2020	Field_D	<0.10	<0.24	<0.10	1.17	21.6	15.9	37.5	49.9	53.8	0.8	5.61	0.76	<0.10	1.12	<0.10	<0.24	<0.10	<0.10	<0.10	1.09	2.82	2.96	<0.10	<0.10	<0.10	<0.10	<0.24	<0.24	<0.24	<0.10	<0.10
		28 Oct 2020	Interlab_D	<0.01	<0.05	<0.01	1	19	14	-	-	-	0.69	4.3	0.72	<0.01	1	<0.01	<0.02	<0.02	<0.01	<0.01	0.79	2.1	2.5	<0.01	0.065	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		31 Mar 2021	Normal	<0.04	<0.09	<0.04	0.87	22.8	13.8	36.6	45.5	48.4	0.4	4.23	0.44	<0.04	0.72	<0.04	<0.09	<0.04	<0.04	<0.04	0.78	2.19	2.22	<0.05	<0.05	<0.05	<0.05	<0.09	<0.09	<0.09	<0.04	<0.04
		31 Mar 2021	Field_D	<0.04	<0.10	<0.04	0.93	24.9	14.6	39.5	49.0	52.1	0.4	4.47	0.47	<0.04	0.78	<0.04	<0.10	<0.04	<0.04	<0.04	0.86	2.31	2.41	<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	<0.04	<0.04
		31 Mar 2021	Interlab_D	<0.01	<0.05	<0.01	0.37	8.8	5.1	-	-	-	0.16	1.4	0.18	<0.01	0.29	<0.01	<0.02	<0.02	<0.01	<0.01	0.29	0.84	0.94	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	0.19	4.69	2.66	7.35	9.14	9.76	<0.1	0.90	0.11	<0.02	0.15	<0.02	<0.05	<0.02	<0.02	<0.02	0.16	0.46	0.44	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Field_D	<0.02	<0.05	<0.02	0.16	3.40	2.31	5.71	7.27	7.84	<0.1	0.79	0.09	<0.02	0.14	<0.02	<0.05	<0.02	<0.02	<0.02	0.15	0.42	0.38	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Interlab_D	<0.01	<0.05	<0.01	0.11	3.1	1.8	-	-	-	0.1	0.56	0.069	<0.01	0.097	<0.01	<0.02	<0.02	<0.01	<0.01	0.097	0.27	0.31	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		04 Mar 2022	Normal	<0.05	<0.12	<0.05	1.88	47.9	26.5	74.4	88.9	94.6	0.4	6.86	0.73	<0.05	0.92	<0.05	<0.12	<0.05	<0.05	<0.05	1.78	3.98	3.68	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		25 Aug 2022	Normal	<0.02	<0.05	<0.02	0.07	2.24	0.90	3.14	3.69	3.90	<0.1	0.24	0.04	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.02	0.07	0.14	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.05	<0.12	<0.05	1.86	38.4	26.0	64.4	86.2	93.5	1.0	9.89	1.02	<0.05	1.82	<0.05	<0.12	<0.05	<0.05	<0.05	1.78	5.46	6.23	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		23 Aug 2023	Normal	<0.02	<0.05	<0.02	0.05	1.47	0.67	2.14	2.54	2.66	<0.2	0.20	0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.08	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	0.20	5.97	2.68	8.65	10.2	10.9	<0.1	0.70	0.10	<0.02	0.12	<0.02	<0.05	<0.02	<0.02	<0.02	0.20	0.43	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		17 Oct 2024	Normal	<0.02	<0.05	<0.02	0.06	1.71	0.77	2.48	2.94	3.12	<0.1	0.21	0.03	<0.02	0.04	<0.02	<0.09	<0.02	<0.02	<0.02	0.06	0.12	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW112	16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.06	0.56	1.68	2.24	3.02	3.32	<0.1	0.36	0.05	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.26	0.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW114	28 Oct 2020	Normal	<0.04	<0.10	<0.04	0.39	0.48	5.29	5.77	10.3	11.5	0.3	2.20	0.33	<0.04	0.40	<0.04	<0.10	<0.04	<0.04	<0.04	0.21	0.94	0.92	<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	<0.04	<0.04
		31 Mar 2021	Normal	<0.08	<0.21	<0.08	1.32	2.15	15.2	17.4	29.6	33.1	0.7	5.68	0.92	<0.08	1.01	<0.08	<0.21	<0.08	<0.08	<0.08	0.75	2.80	2.58	<0.08	<0.08	<0.08	<0.08	<0.21	<0.21	<0.21	<0.08	<0.08
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	0.20	0.21	2.57	2.78	5.25	5.91	0.2	1.18	0.17	<0.02	0.22	<0.02	<0.05	<0.02	<0.02	<0.02	0.10	0.56	0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2022	Normal	<0.02	<0.05	<0.02	0.67	0.91	6.90	7.81	13.8	15.5	0.3	2.71	0.45	<0.02	0.44	<0.02	<0.05	<0.02	<0.02	<0.02	0.42	1.34	1.38	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	1.07	2.09	12.6	14.7	24.3	27.3	0.3	4.57	0.73	<0.02	0.78	<0.02	<0.05	<0.02	<0.02	<0.02	0.70	2.36	2.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.06	<0.02	2.02	4.19	21.9	26.1	44.1	49.7	1.0	8.01	1.26	<0.02	1.46	<0.02	<0.06	<0.02	<0.02	<0.02	1.56	4.09	4.24	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	2.39	3.97	18.0	22.0	39.5	43.9	1.2	7.72	1.49	<0.02	1.61	<0.02	<0.05	<0.02	<0.02	<0.02	0.82	3.57	3.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	1.47	3.88	17.8	21.7	34.3	38.2	0.4	5.83	0.96	<0.02	0.97	<0.02	<0.05	<0.02	<0.02	<0.02	0.98	2.84	3.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	1.18	1.84	10.2	12.0	23.1	25.9	0.6	5.43	0.66	<0.02	0.95	<0.02	<0.05	<0.02	<0.02	<0.02	0.51	2.21	2.28	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW115	28 Oct 2020	Normal	<0.02	<0.05	<0.02	0.02	0.55	0.54	1.09	1.81	1.95	<1.10	0.26	<0.02	<0.02	<0.10	<0.02	<0.05	<0.02	<0.02	<0.02	0.02	0.12	0.44	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.46	0.32	0.78	1.25	1.37	<0.2	0.16	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.12	0.28	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.34	0.27	0.61	0.95	1.02	<0.1	0.13	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.07	0.19	0.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.20	0.36	0.56	0.85	0.94	<0.1	0.14	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.09	0.15	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.10	0.16	0.26	0.43	0.47	<0.1	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.10	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.16	0.34	0.50	0.77	0.85	<0.1	0.12	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.08	0.15	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.14	0.42	0.56	0.84	0.91	<0.1	0.14	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.07	0.14	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.12	0.30	0.42	0.67	0.75	<0.1	0.09	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.08	0.14	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.16	0.42	0.58	1.00	1.11	<0.1	0.17	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	<0.02	0.11	0.20	0.20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW116	28 Oct 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.01	0.07	0.08	0.17	0.20	<0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.03	0.06	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.07	0.07	0.15	0.17	<0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.02	0.06	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.01	0.12	0.13	0.31	0.36	<0.1	0.05	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.05	0.11	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.11	0.13	0.28	0.32	<0.1	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.11	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.10	0.10	0.23	0.26	<0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.03	0.10	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		10 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.11	0.11	0.29	0.33	<0.1	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.14	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.16	0.18	0.38	0.41	<0.1	0.05	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.03	0.15	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.21	0.23	0.50	0.57	<0.1	0.05	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.07	0.22	0.22	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.01	0.18	0.19	0.55	0.67	<0.1	0.10	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.12	0.26	0.26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW139	28 Oct 2020	Normal	<0.02	<0.05	<0.02	0.04	2.04	1.32	3.36	3.70	3.89	<0.1	0.12	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	<0.02	0.06	0.13	0.10	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	0.04	2.85	1.47	4.32	4.62	4.83	<0.1	0.12	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	<0.02	0.07	0.14	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	0.04	2.13	1.34	3.47	3.76	3.98	<0.1	0.12	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.07	0.15	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	0.04	2.32	1.23	3.55	3.77	3.95	<0.1	0.08	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.06	0.12	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2022	Normal	<0.02	<0.05	<0.02	0.03	1.70	0.96	2.66	2.84	2.98	<0.1	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.10	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	0.03	1.93	1.04	2.97	3.20	3.36	<0.1	0.08	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.05	0.11	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	0.04	2.15	1.10	3.25	3.46	3.62	<0.1	0.08	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.05	0.11	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	0.02	1.39	0.53	1.92	2.03	2.09	<0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.02	0.04	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.03	1.81	0.91	2.72	2.89	3.01	<0.1	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.08	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02

Table B.2
Groundwater Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																																
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							0.56	0.07	0.07	0.07																										
PFAS NEMP 3.0 2025 Recreational Water**							10	2	2	2																										
PFAS NEMP 3.0 2025 95% Eco Marine Water***							220	0.13																												
Monitoring Zone	Location Code	Date	Sample Type																																	
Former B Squadron	MW135	28 Oct 2020	Normal	<0.02	<0.05	<0.02	0.07	2.37	1.73	4.10	4.43	4.69	<0.10	0.11	0.02	<0.02	<0.10	<0.02	<0.05	<0.02	<0.02	<0.02	0.13	0.13	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		28 Oct 2020	Field_D	<0.02	<0.05	<0.02	0.07	1.94	1.60	3.54	3.86	4.10	<0.10	0.11	0.02	<0.02	<0.10	<0.02	<0.05	<0.02	<0.02	<0.02	0.12	0.12	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		28 Oct 2020	Interlab_D	<0.01	<0.05	<0.01	0.061	2.1	1.4	-	-	-	<0.05	0.094	0.014	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	0.072	0.092	0.1	<0.01	0.012	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		31 Mar 2021	Normal	<0.04	<0.09	<0.04	0.34	9.54	14.0	23.5	25.7	27.2	<0.2	1.04	0.13	<0.04	0.13	<0.04	<0.09	<0.04	<0.04	<0.04	0.75	0.73	0.53	<0.05	<0.05	<0.05	<0.05	<0.09	<0.09	<0.09	<0.04	<0.04
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	0.07	2.41	1.70	4.11	4.49	4.74	<0.1	0.15	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.11	0.14	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2022	Normal	<0.02	<0.05	<0.02	0.05	1.78	1.04	2.82	3.06	3.25	<0.1	0.08	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.09	0.10	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	0.02	0.55	0.63	1.18	1.29	1.40	<0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.07	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	0.15	11.8	2.45	14.2	15.0	15.5	<0.1	0.27	0.03	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	<0.02	0.33	0.20	0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	0.02	0.42	0.51	0.93	1.01	1.11	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.03	0.07	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	0.14	12.7	2.29	15.0	15.7	16.1	<0.1	0.28	0.04	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.02	0.28	0.12	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.01	0.21	0.47	0.68	0.77	0.85	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.02	0.06	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Field_D	<0.02	<0.05	<0.02	<0.04	0.19	0.48	0.67	0.74	0.79	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.04	0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Interlab_D	<0.01	<0.05	<0.05	0.03	0.18	0.46	0.64	0.86	0.97	<0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.05	0.06	<0.01	0.08	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
Former Fire Station	MW105	29 Oct 2020	Normal	<0.07	<0.17	<0.07	1.65	25.8	37.6	63.4	84.5	91.3	0.7	11.2	1.02	<0.07	1.78	0.11	<0.17	<0.07	<0.07	<0.07	1.71	5.00	4.52	<0.07	0.24	<0.07	<0.07	<0.17	<0.17	<0.17	<0.07	<0.07
		31 Mar 2021	Normal	<0.40	<1.00	<0.40	1.64	29.6	31.3	60.9	77.9	84.0	<2.0	9.12	0.92	<0.40	1.60	<0.40	<1.00	<0.40	<0.40	<0.40	1.56	4.48	3.76	<0.40	<0.40	<0.40	<0.40	<1.00	<1.00	<1.00	<0.40	<0.40
		18 Aug 2021	Interlab_D	<0.01	<0.05	<0.01	1.2	21	30	-	-	-	0.72	8.5	0.82	<0.01	1.4	0.12	<0.02	<0.02	<0.01	0.015	0.84	3.4	3.4	<0.01	0.2	0.039	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		18 Aug 2021	Normal	<0.04	<0.09	<0.04	1.62	27.3	33.4	60.7	79.9	86.4	0.7	9.94	0.96	<0.04	1.62	0.14	<0.09	<0.04	<0.04	<0.04	1.50	4.84	4.13	<0.05	0.24	<0.05	<0.05	<0.09	<0.09	<0.09	<0.04	<0.04
		03 Mar 2022	Normal	<0.05	<0.12	<0.05	1.03	16.9	20.9	37.8	49.5	53.6	0.4	5.92	0.58	<0.05	0.91	0.08	<0.12	<0.05	<0.05	<0.05	1.04	3.00	2.72	<0.05	0.12	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	1.65	25.3	35.4	60.7	78.1	86.1	0.4	8.50	1.05	<0.02	1.47	0.11	<0.05	<0.02	<0.02	<0.02	1.95	5.94	4.16	<0.05	0.20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.05	<0.12	<0.05	1.80	28.0	39.7	67.7	90.4	98.3	0.7	11.2	1.17	<0.05	1.91	0.17	<0.12	<0.05	<0.05	<0.05	2.14	5.66	5.70	<0.05	0.18	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		24 Aug 2023	Normal	<0.10	<0.25	<0.10	3.10	37.6	61.6	99.2	130	143	0.8	15.6	1.68	<0.10	2.79	0.30	<0.25	<0.10	<0.10	<0.10	2.81	9.38	6.77	<0.10	0.40	<0.10	<0.10	<0.25	<0.25	<0.25	<0.10	<0.10
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	1.92	27.0	39.8	66.8	87.5	95.0	0.5	10.1	1.16	<0.02	1.81	0.21	<0.05	<0.02	<0.02	<0.02	1.72	5.60	4.98	<0.05	0.22	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.05	<0.12	<0.05	3.13	31.0	57.7	88.7	125	136	1.2	18.3	1.56	<0.05	3.28	0.27	<0.12	<0.05	<0.05	<0.05	1.80	8.96	8.33	<0.05	0.32	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		16 Oct 2024	Field_D	<0.25	<0.62	<0.25	3.10	27.4	51.9	79.3	114	123	<1.2	19.6	1.80	<0.25	3.20	0.35	<0.62	<0.25	<0.25	<0.25	2.23	6.83	6.86	<0.25	<0.25	<0.25	<0.25	<0.62	<0.62	<0.62	<0.25	<0.25
		18 Aug 2021	Field_D	<0.04	<0.09	<0.04	1.65	26.4	35.4	61.8	81.4	88.0	0.7	10.3	0.92	<0.04	1.59	0.12	<0.09	<0.04	<0.04	<0.04	1.62	4.84	4.22	<0.05	0.20	<0.05	<0.05	<0.09	<0.09	<0.09	<0.04	<0.04
		16 Oct 2024	Interlab_D	<0.1	<0.05	<0.05	4.9	26	65	91	137.56	162.62	2.4	18	2.8	<0.01	4.2	0.47	<0.01	<0.01	<0.01	<0.01	2.4	15	14	0.02	0.19	0.07	<0.01	<0.05	<0.05	<0.05	0.07	<0.05
	MW128	29 Oct 2020	Normal	<0.70	<1.75	<0.70	17.8	483	248	731	853	919	3.8	58.8	6.58	<0.70	10.4	17.2	<1.75	<0.70	<0.70	<0.70	21.5	28.0	24.3	<0.70	<0.70	<0.70	<0.70	<1.75	<1.75	<1.75	<0.70	<0.70
		31 Mar 2021	Normal	<2.26	<5.64	<2.26	26.9	876	419	1,300	1,500	1,620	12.2	98.4	10.2	<2.26	21.4	49.4	<5.64	<2.26	<2.26	<2.26	33.4	43.3	34.5	<2.26	<2.26	<2.26	<2.26	<5.64	<5.64	<5.64	<2.26	<2.26
		18 Aug 2021	Normal	<0.81	<2.02	<0.81	19.4	461	306	767	925	1,000	6.0	80.1	8.22	<0.81	15.6	20.8	<2.02	<0.81	<0.81	<0.81	21.2	32.8	28.9	<0.81	<0.81	<0.81	<0.81	<2.02	<2.02	<2.02	<0.81	<0.81
		03 Mar 2022	Normal	<0.25	<0.62	<0.25	4.52	67.2	82.5	150	184	199	2.0	16.3	1.75	<0.25	3.40	1.75	<0.62	<0.25	<0.25	<0.25	4.78	7.78	6.68	<0.25	<0.25	<0.25	<0.25	<0.62	<0.62	<0.62	<0.25	<0.25
		12 Jul 2022	Normal	<0.25	<0.62	<0.25	5.32	52.4	99.2	152	203	220	2.2	27.2	2.22	<0.25	5.22	0.85	<0.62	<0.25	<0.25	<0.25	4.95	10.8	9.35	<0.25	<0.25	<0.25	<0.25	<0.62	<0.62	<0.62	<0.25	<0.25
		24 Aug 2022	Normal	0.04	<0.09	<0.04	8.35	152	163	315	394	428	3.0	38.4	4.37	0.05	7.83	3.09	<0.09	<0.04	<0.04	<0.04	9.26	20.5	17.5	<0.05	0.08	<0.05	<0.05	<0.09	<0.09	<0.09	0.14	<0.04
		24 Aug 2022	Field_D	<0.04	<0.10	<0.04	8.16	148	162	310	389	422	3.1	38.9	4.35	0.06	7.82	3.23	<0.10	<0.04	<0.04	<0.04	9.29	20.1	16.8	<0.05	0.10	<0.05	<0.05	<0.10	<0.10	<0.10	0.14	<0.04
		24 Aug 2022	Interlab_D	<0.01	<0.05	<0.01	4.9	100	120	-	-	-	2.8	26	2.6	0.055	5.6	2.4	<0.02	<0.02	<0.01	0.044	5.3	11	12	<0.01	0.11	0.019	<0.01	<0.02	<0.05	<0.02	0.16	<0.01
		09 Mar 2023	Normal	0.04	<0.05	<0.02	0.15	6.05	2.75	8.80	11.0	11.4	0.6	0.73	0.06	<0.02	0.40	<0.04	<0.05	<0.02	<0.02	0.02	0.15	0.25	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.96	<2.39	<0.96	32.7	786	419	1,200	1,400	1,490	5.3	99.0	10.2	<0.96	14.8	2.48	<2.39	<0.96	<0.96	<0.96	35.9	40.6	34.5	<0.96	<0.96	1.53	<0.96	<2.39	<2.39	<2.39	5.16	<0.96
		07 Mar 2024	Normal	0.56	<0.87	<0.35	27.1	763	336	1,100	1,260	1,320	2.1	72.1	9.17	<0.35	14.2	2.23	<0.87	<0.35	<0.35	<0.35	29.3	34.2	31.3	<0.35	<0.35	1.13	<0.35	<0.87	<0.87	<0.87	3.22	<0.35
		16 Oct 2024	Normal	<0.05	<0.12	<0.05	2.71	36.1	42.5	78.6	107	114	1.8	13.6	1.12	<0.05	3.40	0.35	<0.12	<0.05	<0.05	<0.05	1.84	5.14	5.70	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
	MW345	17 Jan 2022	Normal	<0.02	<0.06	<0.02	0.82	6.60	11.2	17.8	24.6	27.5	0.3	2.95	0.45	<0.02	0.62	0.22	<0.06	<0.02	<0.02	<0.02	0.69	1.96	1.69	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		17 Jan 2022	Field_D	<0.02	<0.06	<0.02	0.91	7.08	12.6	19.7	27.2	30.7	0.3	3.24	0.46	<0.02	0.63	0.23	<0.06	<0.02	<0.02	<0.02	1.04	2.23	1.97	<0.05	0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		17 Jan 2022	Interlab_D	<0.01	<0.05	<0.05	0.68	7.8	14	21.8	27.73	31.41	0.29	2.5	0.28	<0.01	0.48	0.18	<0.01	<0.01	<0.01	<0.01	1.0	1.4	1.7	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		19 May 2022	Normal	<0.02	<0.06	<0.02	0.88	9.62	12.9	22.5	29.5	32.8	0.3	2.90	0.44	<0.02	0.54	0.20	<0.06	<0.02	<0.02	<0.02	0.88	2.26	1.86	<0.05	0.06	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.06	<0.02	0.60	6.25	8.88	15.1	20.5	22.4	0.2	2.34	0.27	<0.02	0.45	0.11	<0.06	<0.02	<0.02	<0.02	0.46	1.36	1.48	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
Former Fire Training Area	MW131	28 Oct 2020	Normal	<0.02	<0.05	<0.02	0.28	5.88	2.95	8.83	11.2	11.8	<0.50	1.08	0.17	<0.02	0.20	<0.02	<0.05	<0.02	<0.02	<0.02	0.21	0.44	0.53	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.04	<0.10	<0.04	0.47	8.08	4.97	13.0	17.6	18.8	0.2	2.02	0.34	<0.04	0.41	<0.04	<0.10	<0.04	<0.04	<0.04	0.23	1.02	1.00	<0.05	0.08	<0.05	<0.05	<0.10	<0.10	<0.10	<0.04	<0.04
		19 Aug 2021	Normal	<0.02	<0.05	<0.02	0.27	5.32	2.80	8.12	10.5	11.2	<0.1	1.09	0.18	<0.02	0.22	<0.02	<0.05	<0.02	<0.02	<0.02	0.14	0.56	0.54	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		19 Aug 2021	Field_D	<0.02	<0.05	<0.02	0.27	3.94	2.59	6.53	9.01	9.63	0.1	1.11	0.18	<0.02	0.23	<0.02	<0.05	<0.02	<0.02	<0.02	0.14	0.48	0.54	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		19 Aug 2021	Interlab_D	<0.01	<0.05	<0.01	0.18	3.8	2.1	-	-	-	0.13	0.9	0.13	<0.01	0.17	<0.01	<0.02	<0.02	<0.01	<0.01	0.1	0.39	0.47	<0.01	0.047	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	0.39	5.75	3.55	9.30	12.5	13.3	0.1	1.37	0.23	<0.02	0.26	<0.02	<0.05	<0.02	<0.02	<0.02	0.18	0.64	0.74	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		26 Aug 2022	Normal	<0.04	<0.09	<0.04	20.7	163	240	403	588	656	5.7	67.2	10.9	<0.04	18.3	0.79	<0.09	<0.04	<0.04	<0.04	17.3	50.3	62.0	<0.05	0.18	<0.05	<0.05	<0.09	<0.09	<0.09	<0.04	<0.04
		07 Oct 2022	Normal	<0.05	<0.12	<0.05	3.60	45.3	36.8	82.1	114	124	1.6	12.5	2.22	<0.05	3.08	0.10	<0.12	<0.05	<0.05	<0.05	2.93	7.68	8.30	<0.05	0.44	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		09 Mar 2023	Normal	<0.09	<0.23	<0.09	5.98	75.5	51.2	127	176	190	2.8	19.9	3.23	<0.09	4.82	<0.20	<0.23	<0.09	<0.09	<0.09	3.60	10.3	12.2	<0.09	0.56	<0.09	<0.09	<0.23	<0.23	<0.23	<0.09	<0.09
		25 Aug 2023	Normal	<0.10	<0.24	<0.10	3.35	36.2	27.4	63.6	91.1	97.0	1.5	13.1	1.87	<0.10	2.10	<0.10	<0.24	<0.10	<0.10	<0.10	1.38	4.48	5.10	<0.10	0.50	<0.10	<0.10	<0.24	<0.24	<0.24	<0.10	<0.10
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	0.69	3.69	5.95	9.64	15.0	16.5	0.3	1.89	0.37	<0.02	0.52	<0.02	<0.05	<0.02	<0.02	<0.02	0.32	1.14	1.59	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.05	<0.12	<0.05	2.47	24.5	16.4	40.9	58.0	61.7	0.8	7.46	1.17	<0.05	1.52	<0.05	<0.12	<0.05	<0.05	<0.05	0.94	2.74	3.15	<0.05	0.51	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05

Table B.2
Groundwater Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																																
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							0.56	0.07	0.07	0.07																										
PFAS NEMP 3.0 2025 Recreational Water**							10	2	2	2																										
PFAS NEMP 3.0 2025 95% Eco Marine Water***							220	0.13																												
Monitoring Zone	Location Code	Date	Sample Type																																	
Former Helicopter Squadron	MW102	29 Oct 2020	Normal	<0.02	<0.05	<0.02	0.02	0.88	0.54	1.42	1.75	1.86	<0.1	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.03	0.08	0.13	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	0.04	0.98	0.73	1.71	2.23	2.38	0.1	0.11	0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	<0.02	0.03	0.12	0.14	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	0.20	1.39	2.96	4.35	6.02	6.72	0.1	0.52	0.11	<0.02	0.14	<0.02	<0.05	<0.02	<0.02	<0.02	0.19	0.51	0.60	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	0.18	1.47	2.27	3.74	4.93	5.48	<0.1	0.37	0.08	<0.02	0.09	<0.02	<0.05	<0.02	<0.02	<0.02	0.17	0.38	0.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Field_D	<0.02	<0.05	<0.02	0.19	1.56	2.21	3.77	4.99	5.52	<0.1	0.37	0.08	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	<0.02	0.16	0.37	0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Interlab_D	<0.01	<0.05	<0.01	0.12	1.5	2.2	-	-	-	0.12	0.3	0.086	<0.01	0.11	<0.01	<0.02	<0.02	<0.01	<0.01	0.14	0.37	0.47	<0.01	0.015	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	0.16	1.04	2.11	3.15	4.30	4.78	<0.1	0.34	0.08	<0.02	0.11	<0.02	<0.05	<0.02	<0.02	<0.02	0.15	0.33	0.46	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Field_D	<0.02	<0.05	<0.02	0.16	1.07	2.13	3.20	4.27	4.77	<0.1	0.31	0.08	<0.02	0.10	<0.02	<0.05	<0.02	<0.02	<0.02	0.15	0.35	0.42	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Interlab_D	<0.01	<0.05	<0.01	0.13	0.88	1.5	-	-	-	0.098	0.29	0.068	<0.01	0.099	<0.01	<0.02	<0.02	<0.01	<0.01	0.12	0.32	0.43	<0.01	0.011	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	0.03	0.42	0.42	0.84	1.09	1.20	<0.1	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.07	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	0.19	1.92	1.85	3.77	4.89	5.39	<0.1	0.32	0.08	<0.02	0.11	<0.02	<0.05	<0.02	<0.02	<0.02	0.16	0.34	0.42	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.10	0.06	0.16	0.16	0.16	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.03	0.39	0.38	0.77	0.98	1.07	<0.1	0.05	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.02	0.07	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
Lavarack Golf Course and Sporting Fields	MW065	29 Oct 2020	Normal	<0.03	<0.09	<0.03	0.18	8.23	7.17	15.4	17.7	18.4	<0.2	1.47	0.09	<0.03	0.20	<0.03	<0.09	<0.03	<0.03	<0.03	0.27	0.45	0.36	<0.05	<0.05	<0.05	<0.05	<0.09	<0.09	<0.09	<0.03	<0.03
		29 Oct 2020	Field_D	<0.03	<0.09	<0.03	0.19	9.18	7.86	17.0	19.5	20.3	<0.2	1.56	0.10	<0.03	0.22	<0.03	<0.09	<0.03	<0.03	<0.03	0.31	0.49	0.41	<0.05	<0.05	<0.05	<0.05	<0.09	<0.09	<0.09	<0.03	<0.03
		29 Oct 2020	Interlab_D	<0.01	<0.05	<0.01	0.15	6.7	5.6	-	-	-	0.17	1.2	0.088	<0.01	0.2	<0.01	<0.02	<0.02	<0.01	<0.01	0.19	0.36	0.35	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	0.23	10.8	7.19	18.0	20.8	21.7	0.2	1.58	0.11	<0.02	0.26	<0.02	<0.05	<0.02	<0.02	<0.02	0.39	0.52	0.40	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.05	<0.12	<0.05	0.24	8.78	7.37	16.2	18.8	19.6	<0.2	1.60	0.13	<0.05	0.24	<0.05	<0.12	<0.05	<0.05	<0.05	0.35	0.52	0.42	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		03 Mar 2022	Normal	<0.02	<0.06	<0.02	0.29	9.00	8.05	17.0	20.4	21.3	0.2	1.93	0.14	<0.02	0.32	<0.02	<0.06	<0.02	<0.02	<0.02	0.34	0.53	0.51	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		25 Aug 2022	Normal	<0.02	<0.05	<0.02	0.24	9.83	7.22	17.0	19.8	20.7	0.1	1.59	0.13	<0.02	0.25	<0.02	<0.05	<0.02	<0.02	<0.02	0.42	0.53	0.39	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	0.30	12.9	8.87	21.8	25.4	26.5	0.2	2.13	0.14	<0.02	0.35	<0.02	<0.05	<0.02	<0.02	<0.02	0.51	0.59	0.52	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.06	<0.02	0.33	9.93	9.73	19.7	23.3	24.5	<0.1	2.29	0.17	<0.02	0.34	<0.02	<0.06	<0.02	<0.02	<0.02	0.46	0.73	0.52	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	0.09	7.54	2.02	9.56	10.3	10.6	<0.1	0.42	0.03	<0.02	0.10	<0.02	<0.05	<0.02	<0.02	<0.02	0.19	0.12	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.06	<0.02	0.33	10.2	11.6	21.8	26.3	27.5	0.2	2.73	0.17	<0.02	0.38	<0.02	<0.06	<0.02	<0.02	<0.02	0.42	0.82	0.66	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
	MW120	29 Oct 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.14	0.13	0.27	0.37	0.37	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.12	0.16	0.28	0.49	0.52	<0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	0.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.12	0.09	0.21	0.31	0.31	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.12	0.07	0.19	0.26	0.26	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.10	0.06	0.16	0.26	0.26	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.08	0.03	0.11	0.14	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.12	0.04	0.16	0.19	0.19	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Field_D	<0.02	<0.05	<0.02	<0.01	0.10	0.04	0.14	0.17	0.17	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Interlab_D	<0.01	<0.05	<0.05	<0.01	0.08	0.05	0.13	0.16	0.16	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.08	0.03	0.11	0.15	0.15	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.07	0.02	0.09	0.12	0.12	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Interlab_D	<0.01	<0.05	<0.05	0.02	0.52	0.06	0.58	0.69	0.69	<0.05	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		16 Oct 2024	Field_D	<0.02	<0.05	<0.02	<0.01	0.06	0.04	0.10	0.14	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW121	29 Oct 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.06	0.33	0.39	0.44	0.48	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.04	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.06	0.27	0.33	0.37	0.40	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.06	0.28	0.34	0.38	0.42	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.06	0.26	0.32	0.36	0.40	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.07	0.30	0.37	0.41	0.45	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.08	0.42	0.50	0.59	0.65	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.06	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.11	0.30	0.41	0.45	0.49	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.07	0.26	0.33	0.37	0.41	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.04	0.64	0.68	0.89	0.98	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.09	0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW122	29 Oct 2020	Normal	<0.02	<0.05	<0.02	0.05	1.89	0.76	2.65	2.92	3.07	<0.1	0.09	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.05	0.10	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.10	0.06	0.16	0.21	0.21	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	0.03	0.85	0.39	1.24	1.42	1.51	<0.1	0.05	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.03	0.06	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.10	<0.24	<0.10	<0.10	2.20	0.79	2.99	3.10	3.10	<0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.24	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	<0.10	<0.10	<0.10	<0.10	<0.24	<0.24	<0.24	<0.10	<0.10
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	0.08	2.88	1.25	4.13	4.56	4.83	<0.1	0.13	0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	<0.02	0.10	0.17	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	0.07	2.37	0.94	3.31	3.67	3.86	<0.1	0.11	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.07	0.12	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Field_D	<0.02	<0.05	<0.02	0.05	1.98	0.76	2.74	3.05	3.22	<0.1	0.10	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.06	0.11	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Interlab_D	<0.01	<0.05	<0.05	0.05	2.3	0.74	3.04	3.38	3.54	0.08	0.09	0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	0.07	0.08	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	0.10	3.56	1.14	4.70	5.36	5.62	0.1	0.15	0.03	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.02	0.10	0.16	0.18	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.01	<0.01	0.01	0.01	0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.06	2.78	1.05	3.83	4.22	4.44	<0.1	0.12	0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	<0.02	0.08	0.14	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02

Table B.2
Groundwater Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																															
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							0.56	0.07	0.07	0.07																									
PFAS NEMP 3.0 2025 Recreational Water**							10	2	2	2																									
PFAS NEMP 3.0 2025 95% Eco Marine Water***							220	0.13																											
Monitoring Zone	Location Code	Date	Sample Type																																
Lavarack Golf Course and Sporting Fields	MW123I	28 Oct 2020	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.70	0.70	1.16	1.38	<0.1	0.13	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.22	0.30	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.37	0.37	0.61	0.73	<0.1	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.12	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Field_D	<0.02	<0.05	<0.02	<0.01	<0.01	0.34	0.34	0.57	0.68	<0.1	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.11	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Interlab_D	<0.01	<0.05	<0.01	<0.01	<0.02	0.34	-	-	-	<0.05	0.047	<0.01	<0.01	<0.02	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	0.097	0.13	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.51	0.51	0.80	0.98	<0.1	0.09	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.18	0.20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.99	0.99	1.82	2.20	<0.1	0.26	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.38	0.52	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.75	0.75	1.08	1.28	<0.1	0.11	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.20	0.22	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	0.06	0.04	14.4	14.4	22.0	26.1	0.3	2.38	0.17	<0.02	0.38	<0.02	<0.05	<0.02	<0.02	<0.02	0.06	4.04	4.21	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.41	0.41	0.69	0.83	<0.1	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.14	0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.01	0.59	0.60	0.92	1.06	<0.1	0.08	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.14	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.47	0.47	0.74	0.88	<0.1	0.08	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.14	0.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW123S	29 Oct 2020	Normal	<0.03	<0.09	<0.03	0.51	2.64	9.96	12.6	15.7	17.4	0.2	1.13	0.16	<0.03	0.20	<0.03	<0.09	<0.03	<0.03	<0.03	0.99	0.76	0.86	<0.05	<0.05	<0.05	<0.05	<0.09	<0.09	<0.09	<0.03	<0.03
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	0.88	2.68	17.5	20.2	24.7	27.8	0.3	1.61	0.31	<0.02	0.41	<0.02	<0.05	<0.02	<0.02	<0.02	2.04	1.02	1.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	0.52	3.24	7.98	11.2	14.1	16.0	0.2	1.05	0.16	<0.02	0.20	<0.02	<0.05	<0.02	<0.02	<0.02	1.10	0.78	0.75	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.06	<0.02	0.63	6.97	9.43	16.4	19.1	21.0	0.2	0.90	0.15	<0.02	0.17	<0.02	<0.06	<0.02	<0.02	<0.02	1.20	0.63	0.69	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		25 Aug 2022	Normal	<0.02	<0.05	<0.02	0.52	4.21	10.2	14.4	17.1	18.8	0.1	0.94	0.17	<0.02	0.20	<0.02	<0.05	<0.02	<0.02	<0.02	1.02	0.66	0.74	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.09	<0.23	<0.09	0.37	6.25	6.66	12.9	15.0	16.5	<0.5	0.80	<0.09	<0.09	0.14	<0.09	<0.23	<0.09	<0.09	<0.09	0.83	0.60	0.83	<0.09	<0.09	<0.09	<0.09	<0.23	<0.23	<0.23	<0.09	<0.09
		24 Aug 2023	Normal	<0.02	<0.06	<0.02	0.44	5.08	6.93	12.0	14.2	15.8	<0.1	0.76	0.12	<0.02	0.14	<0.02	<0.06	<0.02	<0.02	<0.02	0.81	0.74	0.78	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	0.09	0.83	1.82	2.65	3.48	3.80	<0.1	0.31	0.05	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	<0.02	0.12	0.20	0.30	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.31	3.80	5.62	9.42	12.4	13.9	0.2	0.87	0.09	<0.02	0.16	<0.02	<0.05	<0.02	<0.02	<0.02	0.62	0.91	1.34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
Monocell	MW014A	02 Mar 2021	Normal	<0.05	<0.12	<0.05	1.44	21.9	15.2	37.1	46.9	50.9	0.4	3.81	0.68	<0.05	0.82	0.18	<0.12	<0.05	<0.05	<0.05	1.46	2.32	2.53	<0.05	0.13	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		22 Feb 2022	Normal	<0.02	<0.06	<0.02	0.66	9.91	6.99	16.9	21.8	23.7	0.2	1.94	0.32	<0.02	0.44	0.08	<0.06	<0.02	<0.02	<0.02	0.61	1.23	1.24	<0.05	0.07	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		27 May 2022	Normal	<0.02	<0.06	<0.02	0.86	12.0	10.2	22.2	28.5	31.1	0.3	2.47	0.41	<0.02	0.54	0.11	<0.06	<0.02	<0.02	<0.02	0.72	1.77	1.68	<0.05	0.06	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		12 Jul 2022	Normal	<0.05	<0.12	<0.05	1.02	14.8	11.2	26.0	32.6	35.4	<0.2	2.74	0.46	<0.05	0.50	0.10	<0.12	<0.05	<0.05	<0.05	0.86	1.90	1.86	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.01	0.26	0.35	0.61	0.77	0.82	<0.1	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW072	28 Oct 2020	Normal	<0.47	<1.18	<0.47	2.94	80.7	39.0	120	139	152	<2.4	8.82	1.14	<0.47	1.61	4.17	<1.18	<0.47	<0.47	<0.47	4.50	4.55	4.55	<0.47	<0.47	<0.47	<0.47	<1.18	<1.18	<1.18	<0.47	<0.47
		02 Mar 2021	Normal	<0.38	<0.96	<0.38	3.94	170	50.6	221	248	266	<1.9	12.0	1.64	<0.38	2.29	5.20	<0.96	<0.38	<0.38	<0.38	6.19	6.27	7.56	<0.38	<0.38	<0.38	<0.38	<0.96	<0.96	<0.96	<0.38	<0.38
		02 Mar 2021	Field_D	<0.38	<0.96	<0.38	4.14	169	52.6	222	248	266	<1.9	12.2	1.57	<0.38	2.34	5.18	<0.96	<0.38	<0.38	<0.38	5.80	6.68	6.52	<0.38	<0.38	<0.38	<0.38	<0.96	<0.96	<0.96	<0.38	<0.38
		02 Mar 2021	Interlab_D	<0.01	<0.05	<0.05	5.2	230	85	315	351.64	379.24	0.95	16	2.0	<0.01	3.1	7.3	<0.01	<0.01	<0.01	<0.01	8.2	8.6	9.2	<0.01	0.19	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		31 Mar 2021	Normal	<0.42	<1.05	<0.42	4.37	150	61.4	211	240	258	<2.1	12.9	1.68	<0.42	2.27	4.37	<1.05	<0.42	<0.42	<0.42	6.00	8.10	7.35	<0.42	<0.42	<0.42	<0.42	<1.05	<1.05	<1.05	<0.42	<0.42
		31 Mar 2021	Field_D	<0.37	<0.92	<0.37	3.63	126	50.0	176	200	216	<1.8	11.2	1.39	<0.37	2.27	3.74	<0.92	<0.37	<0.37	<0.37	5.05	6.30	6.01	<0.37	<0.37	<0.37	<0.37	<0.92	<0.92	<0.92	<0.37	<0.37
		31 Mar 2021	Interlab_D	<0.01	<0.05	<0.01	2.4	93	40	-	-	-	0.84	7.7	1	<0.01	1.4	3.4	<0.02	<0.02	<0.01	<0.01	2.9	4.4	4.9	<0.01	0.16	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		20 Aug 2021	Normal	<0.24	<0.60	<0.24	2.63	82.8	44.9	128	151	164	1.4	10.1	1.39	<0.24	1.91	2.82	<0.60	<0.24	<0.24	<0.24	3.47	6.91	5.69	<0.24	<0.24	<0.24	<0.24	<0.60	<0.60	<0.60	<0.24	<0.24
		22 Feb 2022	Normal	<0.25	<0.62	<0.25	2.92	126	41.5	168	190	204	<1.2	9.98	1.35	<0.25	2.05	4.02	<0.62	<0.25	<0.25	<0.25	4.22	6.58	5.75	<0.25	<0.25	<0.25	<0.25	<0.62	<0.62	<0.62	<0.25	<0.25
		03 Mar 2022	Normal	<0.10	<0.25	<0.10	2.78	96.0	37.2	133	154	165	0.8	8.68	1.12	<0.10	1.57	2.60	<0.25	<0.10	<0.10	<0.10	3.44	5.27	5.39	<0.10	<0.10	<0.10	<0.10	<0.25	<0.25	<0.25	<0.10	<0.10
		25 Aug 2022	Normal	<0.04	<0.09	<0.04	2.03	60.3	37.2	97.5	116	126	0.3	7.80	1.00	<0.04	1.48	1.80	<0.09	<0.04	<0.04	<0.04	3.22	5.92	5.34	<0.05	0.07	<0.05	<0.05	<0.09	<0.09	<0.09	<0.04	<0.04
		09 Mar 2023	Normal	<0.10	<0.24	<0.10	2.30	76.3	39.8	116	140	152	0.7	10.0	1.07	<0.10	1.86	2.27	<0.24	<0.10	<0.10	<0.10	3.24	7.03	7.92	<0.10	<0.10	<0.10	<0.10	<0.24	<0.24	<0.24	<0.10	<0.10
		25 Aug 2023	Normal	<0.10	<0.24	<0.10	2.07	50.0	39.3	89.3	110	119	0.7	9.73	0.99	<0.10	1.35	1.59	<0.24	<0.10	<0.10	<0.10	2.26	5.44	5.66	<0.10	<0.10	<0.10	<0.10	<0.24	<0.24	<0.24	<0.10	<0.10
		25 Aug 2023	Field_D	<0.09	<0.24	<0.09	2.08	49.8	38.5	88.3	108	117	0.6	9.45	0.93	<0.09	1.28	1.53	<0.24	<0.09	<0.09	<0.09	2.16	5.54	5.34	<0.09	<0.09	<0.09	<0.09	<0.24	<0.24	<0.24	<0.09	<0.09
		25 Aug 2023	Interlab_D	<0.1	<0.05	<0.05	1.7	46	40	86	101.72	111.22	0.74	6.6	0.93	<0.01	1.1	1.8	<0.01	<0.01	<0.01	<0.01	1.3	4.2	4.6	<0.01	0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	1.52	42.0	32.1	74.1	88.7	96.5	0.4	6.15	0.76	<0.02	1.12	1.16	<0.05	<0.02	<0.02	<0.02	1.72	4.90	4.66	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.05	<0.12	<0.05	1.37	29.6	26.8	56.4	72.8	79.2	0.5	7.73	0.75	<0.05	1.27	0.78	<0.12	<0.05	<0.05	<0.05	1.15	4.38	4.83	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
	MW074	28 Oct 2020	Normal	<0.48	<1.20	<0.48	2.68	47.9	41.1	89.0	111	121	<2.4	10.2	1.48	<0.48	1.96	1.44	<1.20	<0.48	<0.48	<0.48	2.87	5.84	5.93	<0.48	<0.48	<0.48	<0.48	<1.20	<1.20	<1.20	<0.48	<0.48
		02 Mar 2021	Normal	<0.07	<0.19	<0.07	1.98	33.0	31.6	64.6	81.6	89.3	0.6	7.40	1.06	<0.07	1.53	1.10	<0.19	<0.07	<0.07	<0.07	2.15	4.40	4.35	<0.07	0.11	<0.07	<0.07	<0.19	<0.19	<0.19	<0.07	<0.07
		31 Mar 2021	Normal	<0.40	<1.01	<0.40	2.07	41.8	33.4	75.2	91.0	98.8	<2.0	7.38	0.93	<0.40	1.58	1.05	<1.01	<0.40	<0.40	<0.40	2.03	4.62	3.89	<0.40	<0.40	<0.40	<0.40	<1.01	<1.01	<1.01	<0.40	<0.40
		19 Aug 2021	Normal	<0.19	<0.48	<0.19	3.37	54.2	52.9	107	135	148	1.4	12.8	1.71	<0.19	2.46	1.69	<0.48	<0.19	<0.19	<0.19	3.14	8.10	6.31	<0.19	0.21	<0.19	<0.19	<0.48	<0.48	<0.48	<0.19	<0.19
		22 Feb 2022	Normal	<0.10	<0.25	<0.10	2.61	39.8	40.7	80.5	102	112	0.9	9.83	1.31	<0.10	2.00	1.43	<0.25	<0.10	<0.10	<0.10	2.86	5.53	5.08	<0.10	0.27	<0.10	<0.10	<0.25	<0.25	<0.25	<0.10	<0.10
		03 Mar 2022	Normal	<0.10	<0.25	<0.10	2.78	45.6	37.6	83.2	103	111	0.8	8.25	1.15	<0.10	1.59	1.34	<0.25	<0.10	<0.10	<0.10	2.42	4.85	4.85	<0.10	<0.10	<0.10	<0.10	<0.25	<0.25	<0.25	<0.10	<0.10
		25 Aug 2022	Normal	<0.04	<0.09	<0.04	2.34	55.0	41.5	96.5	118	129	0.4	9.42	1.18	<0.04	1.82	1.54	<0.09	<0.04	<0.04	<0.04	3.59	6.48	5.95	<0.05	0.14	<0.05	<0.05	<0.09	<0.09	<0.09	<0.04	<0.04
		07 Mar 2023	Normal	<0.02	<0.05	<0.02	2.83	71.7	44.7	116	140	155	1.0	9.56	1.30	<0.02	2.20	2.05	<0.05	<0.02	<0.02	<0.02	5.70	7.74	6.49	<0.05	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.05	<0.12	<0.05	2.85	51.0	41.4	92.4	114	126	0.8	9.32	1.26	<0.05	1.73	1.81	<0.12	<0.05	<0.05	<0.05	3.33	6.14	6.00	<0.05	0.08	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		25 Aug 2023	Normal	<0.10	<0.25	<0.10	3.18	59.5	51.6	111	137	149	0.7	12.5	1.36	<0.10	1.75	1.89	<0.25	<0.10	<0.10	<0.10	3.09	6.52	6.76	<0.10	0.11	<0.10	<0.10	<0.25	<0.25	<0.25	<0.10	<0.10
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	1.94	38.3	34.5	72.8	87.9	95.6	0.4	6.51	0.91	<0.02	1.19	1.10	<0.05	<0.02	<0.02	<0.02	2.14	4.50	4.08	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.05	<0.12	<0.05	2.57	47.5	37.8	85.3	108	118	0.8	11.0	1.10	<0.05	1.72	1.52	<0.12	<0.05	<0.05	<0.05	2.64	6.23	5.59	<0.05	0.11	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05

Table B.2
Groundwater Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																																
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							0.56	0.07	0.07	0.07																										
PFAS NEMP 3.0 2025 Recreational Water**							10	2	2	2																										
PFAS NEMP 3.0 2025 95% Eco Marine Water***							220	0.13																												
Monitoring Zone	Location Code	Date	Sample Type																																	
Monocell	MW077	07 Mar 2023	Normal	<0.02	<0.06	<0.02	<0.02	0.58	0.46	1.04	1.27	1.34	<0.1	0.10	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02	0.07	0.13	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.03	0.66	0.31	0.97	1.17	1.22	<0.1	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW106	28 Oct 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.09	0.12	0.21	0.28	0.28	<0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.05	0.07	0.12	0.20	0.20	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.10	0.25	0.35	0.45	0.48	<0.1	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.05	0.12	0.17	0.23	0.23	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.09	0.16	0.25	0.37	0.37	<0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	0.01	0.18	0.35	0.53	0.75	0.79	<0.1	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.04	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2023	Normal	<0.02	<0.05	<0.02	0.01	0.40	0.32	0.72	0.79	0.82	<0.1	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	<0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.08	0.06	0.14	0.19	0.19	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.07	0.07	0.14	0.19	0.19	<0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Field_D	<0.02	<0.05	<0.02	<0.01	0.05	0.07	0.12	0.12	0.12	<0.1	<0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Interlab_D	<0.01	<0.05	<0.05	0.01	0.14	0.17	0.31	0.47	0.5	0.06	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
	MW349	08 Jun 2022	Normal	<0.04	<0.11	<0.04	1.50	41.3	21.9	63.2	74.2	79.8	0.4	4.75	0.73	<0.04	0.91	0.87	<0.11	<0.04	<0.04	<0.04	1.66	3.11	2.69	<0.05	<0.05	<0.05	<0.05	<0.11	<0.11	<0.11	<0.04	<0.04
		08 Jun 2022	Field_D	<0.08	<0.20	<0.08	1.70	41.6	23.8	65.4	76.7	82.5	<0.4	5.10	0.75	<0.08	0.93	0.89	<0.20	<0.08	<0.08	<0.08	1.74	3.09	2.86	<0.08	<0.08	<0.08	<0.08	<0.20	<0.20	<0.20	<0.08	<0.08
		08 Jun 2022	Interlab_D	<0.01	<0.05	<0.05	1.1	28	19	47	56.84	63.13	0.44	4	0.43	<0.01	0.77	0.59	<0.01	<0.01	<0.01	<0.01	1.5	2.7	3.1	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		12 Jul 2022	Normal	<0.05	<0.12	<0.05	1.52	33.2	21.7	54.9	65.1	70.7	0.3	4.48	0.62	<0.05	0.76	0.87	<0.12	<0.05	<0.05	<0.05	1.56	3.13	2.55	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		16 Oct 2024	Normal	<0.05	<0.12	<0.05	1.60	24.2	24.4	48.6	63.8	70.0	0.5	7.53	0.77	<0.05	1.18	0.71	<0.12	<0.05	<0.05	<0.05	1.74	3.78	3.60	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		12 Jul 2022	Field_D	<0.10	<0.25	<0.10	1.40	31.1	21.7	52.8	62.3	67.7	<0.5	4.14	0.61	<0.10	0.71	0.78	<0.25	<0.10	<0.10	<0.10	1.46	3.17	2.61	<0.10	<0.10	<0.10	<0.10	<0.25	<0.25	<0.25	<0.10	<0.10
		12 Jul 2022	Interlab_D	<0.01	<0.05	<0.05	1.1	40	15	55	62.45	67	0.36	3.1	0.37	<0.01	0.62	0.60	<0.01	<0.01	<0.01	<0.01	1.4	1.7	1.9	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
Stockpile Designated Area 2	MW141	28 Oct 2020	Normal	<0.02	<0.05	<0.02	0.07	0.64	1.68	2.32	3.27	3.58	<0.1	0.49	0.03	<0.02	0.09	<0.02	<0.05	<0.02	<0.02	<0.02	0.07	0.24	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	0.07	0.77	1.61	2.38	3.29	3.56	<0.1	0.48	0.04	<0.02	0.10	<0.02	<0.05	<0.02	<0.02	<0.02	0.07	0.20	0.22	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		17 Aug 2021	Normal	<0.02	<0.05	<0.02	0.04	0.37	0.78	1.15	1.60	1.73	<0.1	0.23	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	<0.02	0.03	0.10	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	0.05	0.51	1.06	1.57	2.14	2.33	<0.1	0.28	0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	<0.02	0.05	0.14	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	0.04	0.52	1.12	1.64	2.18	2.37	<0.1	0.28	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.15	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	0.04	0.44	0.96	1.40	1.90	2.07	<0.1	0.23	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.13	0.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2023	Normal	<0.02	<0.05	<0.02	0.03	0.42	0.84	1.26	1.64	1.76	<0.1	0.19	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.03	0.09	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	0.02	0.28	0.52	0.80	1.01	1.09	<0.1	0.10	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.02	0.06	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Field_D	<0.02	<0.05	<0.02	0.02	0.31	0.50	0.81	1.05	1.11	<0.1	0.10	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.06	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.03	0.27	0.44	0.71	1.03	1.11	<0.1	0.16	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	<0.02	0.02	0.06	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Field_D	<0.02	<0.05	<0.02	0.04	0.50	1.15	1.65	2.21	2.40	<0.1	0.27	0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.15	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Interlab_D	<0.01	<0.05	<0.01	0.035	0.49	1	-	-	-	0.067	0.25	0.017	<0.01	0.049	<0.01	<0.02	<0.02	<0.01	<0.01	0.031	0.13	0.16	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
Suspected AFFF Disposal Area	MW101	29 Oct 2020	Normal	<0.02	<0.05	<0.02	0.04	1.27	0.80	2.07	2.49	2.63	<0.1	0.13	0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.10	0.20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	0.02	0.34	0.34	0.68	1.09	1.17	<0.10	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.08	0.26	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	0.03	0.67	0.60	1.27	1.65	1.78	<0.1	0.09	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.03	0.10	0.26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Field_D	<0.02	<0.05	<0.02	0.03	0.78	0.58	1.36	1.79	1.91	<0.1	0.09	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.02	0.10	0.31	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Interlab_D	<0.01	<0.05	<0.01	0.016	0.5	0.5	-	-	-	<0.05	0.061	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	0.013	0.062	0.19	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	0.02	0.37	0.42	0.79	1.29	1.41	<0.1	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.12	0.41	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	0.01	0.37	0.53	0.90	1.41	1.55	<0.1	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.14	0.43	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.20	0.15	0.35	0.53	0.56	<0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	0.02	0.69	0.35	1.04	1.28	1.34	<0.1	0.08	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.06	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.03	0.01	0.04	0.06	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
Top, Middle and Lower Dams	MW138	29 Oct 2020	Normal	<0.02	<0.05	<0.02	0.29	7.60	6.19	13.8	17.1	18.6	0.2	1.46	0.20	<0.02	0.29	0.04	<0.05	<0.02	<0.02	<0.02	0.35	1.10	0.88	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.04	<0.10	<0.04	0.37	8.81	6.15	15.0	18.3	19.7	0.2	1.41	0.19	<0.04	0.29	0.04	<0.10	<0.04	<0.04	<0.04	0.42	0.95	0.90	<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	<0.04	<0.04
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	0.40	6.91	6.01	12.9	16.4	17.8	0.2	1.50	0.20	<0.02	0.26	0.04	<0.05	<0.02	<0.02	<0.02	0.39	0.96	0.94	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	0.34	7.09	5.17	12.3	15.2	16.4	0.1	1.21	0.19	<0.02	0.22	0.04	<0.05	<0.02	<0.02	<0.02	0.40	0.77	0.88	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Field_D	<0.02	<0.05	<0.02	0.36	6.99	5.20	12.2	15.2	16.5	0.2	1.22	0.17	<0.02	0.23	0.04	<0.05	<0.02	<0.02	<0.02	0.40	0.82	0.86	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Interlab_D	<0.01	<0.05	<0.01	0.3	4.3	3.8	-	-	-	0.2	1.2	0.17	<0.01	0.26	0.097	<0.02	<0.02	<0.01	<0.01	0.33	0.69	0.81	<0.01	0.014	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	0.32	6.04	5.03	11.1	13.9	15.2	0.1	1.17	0.18	<0.02	0.24	0.04	<0.05	<0.02	<0.02	<0.02	0.38	0.85	0.80	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	0.43	8.75	6.75	15.5	19.6	21.5	0.2	1.62	0.22	<0.02	0.33	0.05	<0.05	<0.02	<0.02	<0.02	0.64	1.18	1.30	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.06	<0.02	0.43	8.33	6.03	14.4	17.6	19.2	<0.1	1.44	0.20	<0.02	0.31	0.04	<0.06	<0.02	<0.02	<0.02	0.46	1.03	0.89	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	0.36	7.51	5.37	12.9	15.9	17.2	0.1	1.19	0.19	<0.02	0.25	0.04	<0.05	<0.02	<0.02	<0.02	0.44	0.85	0.93	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.47	6.18	5.34	11.5	16.2	17.8	0.2	2.24	0.24	<0.02	0.37	0.06	<0.05	<0.02	<0.02	<0.02	0.46	1.08	1.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02

Table B.2
Groundwater Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																																	
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							0.56	0.07	0.07	0.07																											
PFAS NEMP 3.0 2025 Recreational Water**							10	2	2	2																											
PFAS NEMP 3.0 2025 95% Eco Marine Water***							220	0.13																													
Monitoring Zone	Location Code	Date	Sample Type																																		
Base Boundary	MW002	28 Oct 2020	Normal	<0.02	<0.05	<0.02	0.02	0.79	0.44	1.23	1.38	1.41	<0.1	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	0.06	2.72	2.19	4.91	5.34	5.61	<0.1	0.18	0.02	<0.02	0.03	0.05	<0.05	<0.02	<0.02	<0.02	0.09	0.13	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		19 Aug 2021	Normal	<0.02	<0.05	<0.02	0.02	1.28	1.25	2.53	2.72	2.88	<0.1	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.05	0.11	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2021	Normal	<0.02	<0.05	<0.02	0.06	2.88	1.32	4.20	4.58	4.79	<0.1	0.17	0.02	<0.02	0.03	0.06	<0.05	<0.02	<0.02	<0.02	0.08	0.07	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		21 Feb 2022	Normal	<0.02	<0.05	<0.02	0.03	1.26	0.82	2.08	2.30	2.43	<0.1	0.09	<0.02	<0.02	0.02	0.03	<0.05	<0.02	<0.02	<0.02	0.04	0.06	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	0.03	1.46	0.74	2.20	2.38	2.46	<0.1	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.03	0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2022	Normal	<0.02	<0.05	<0.02	0.01	0.82	0.53	1.35	1.45	1.52	<0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.02	0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	0.06	3.16	1.93	5.09	5.58	5.89	<0.1	0.20	0.02	<0.02	0.04	0.07	<0.05	<0.02	<0.02	0.02	0.09	0.13	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Field_D	<0.02	<0.05	<0.02	0.03	1.81	0.81	2.62	2.80	2.93	<0.1	0.08	<0.02	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	<0.02	0.04	0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.78	0.61	1.39	1.51	1.57	<0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.06	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	0.03	1.87	0.89	2.76	2.95	3.10	<0.1	0.08	<0.02	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	0.02	0.04	0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.01	0.91	1.26	2.17	2.31	2.49	<0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.06	0.12	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW003	29 Oct 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.06	0.03	0.09	0.09	0.09	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.02	<0.02	0.02	0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.04	<0.02	0.04	0.04	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Feb 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	0.18	0.18	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Field_D	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	0.12	0.12	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Interlab_D	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	0.12	0.12	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.12	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW117D	28 Oct 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.02	0.04	0.10	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		30 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.02	0.02	0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		17 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		14 Feb 2022	Normal	<0.02	<0.06	<0.02	<0.02	0.13	0.11	0.24	0.38	0.38	<0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.12	<0.05	0.11	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
	MW117S	28 Oct 2020	Normal	<0.04	<0.09	<0.04	0.50	6.32	19.2	25.5	32.2	34.5	0.4	3.70	0.31	<0.04	0.52	0.04	<0.09	<0.04	<0.04	<0.04	0.78	1.48	1.25	<0.05	<0.05	<0.05	<0.05	<0.09	<0.09	<0.09	<0.04	<0.04
		30 Mar 2021	Normal	<0.02	<0.06	<0.02	0.50	6.57	17.3	23.9	30.0	32.3	0.3	3.33	0.26	<0.02	0.51	0.05	<0.06	<0.02	<0.02	<0.02	0.75	1.52	1.19	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		17 Aug 2021	Normal	<0.05	<0.12	<0.05	0.50	7.47	15.3	22.8	28.6	30.6	<0.2	3.41	0.30	<0.05	0.39	<0.05	<0.12	<0.05	<0.05	<0.05	0.66	1.37	1.20	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
	MW118	28 Oct 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.01	0.04	0.05	0.09	0.09	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		30 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.02	0.04	0.04	0.09	0.09	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		17 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.04	0.04	0.10	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Feb 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.03	0.03	0.07	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.03	0.03	0.08	0.08	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.01	0.03	0.04	0.12	0.12	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Field_D	<0.02	<0.05	<0.02	<0.01	0.01	0.03	0.04	0.12	0.12	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Interlab_D	<0.01	<0.05	<0.05	<0.01	<0.01	0.03	0.03	0.07	<0.1	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		25 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.07	0.04	0.11	0.37	0.37	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.05	0.20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.02	0.02	0.07	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.03	0.03	0.10	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Field_D	<0.02	<0.05	<0.02	<0.01	0.01	0.02	0.03	0.10	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Interlab_D	<0.01	<0.05	<0.05	<0.01	0.02	0.04	0.06	0.12	0.12	<0.05	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
	MW119	28 Oct 2020	Normal	<0.02	<0.05	<0.02	0.05	<0.01	0.04	0.04	0.75	0.75	<0.1	0.20	0.11	<0.02	0.22	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		30 Mar 2021	Normal	<0.02	<0.05	<0.02	0.06	<0.01	0.03	0.03	0.63	0.63	<0.1	0.15	0.09	<0.02	0.16	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		17 Aug 2021	Normal	<0.02	<0.05	<0.02	0.10	<0.01	0.05	0.05	1.08	1.08	0.1	0.23	0.15	<0.02	0.22	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.23	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Feb 2022	Normal	<0.02	<0.05	<0.02	0.11	<0.02	0.06	0.06	1.19	1.19	0.1	0.24	0.16	<0.02	0.23	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.29	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	0.11	0.02	0.05	0.07	0.91	0.91	<0.1	0.17	0.13	<0.02	0.16	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2023	Normal	<0.02	<0.05	<0.02	0.13	0.04	0.06	0.10	1.13	1.13	<0.1	0.19	0.15	<0.02	0.20	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.36	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2023	Normal	<0.02	<0.05	<0.02	0.15	0.05	0.06	0.11	1.20	1.20	0.1	0.21	0.14	<0.02	0.18	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.31	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	0.14	0.04	0.05	0.09	1.00	1.00	<0.1	0.13	0.14	<0.02	0.16	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.14	0.04	0.05	0.09	1.30	1.30	0.1	0.22	0.14	<0.02	0.20	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.41	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02

Table B.2
Groundwater Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																															
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							0.56	0.07	0.07	0.07																									
PFAS NEMP 3.0 2025 Recreational Water**							10	2	2	2																									
PFAS NEMP 3.0 2025 95% Eco Marine Water***							220	0.13																											
Monitoring Zone	Location Code	Date	Sample Type																																
Base Boundary	MW124	02 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.01	<0.02	0.01	0.18	0.18	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.25	<0.62	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<1.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.62	<0.62	<0.62	<0.25	<0.25
		17 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Field_D	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.02	<0.01	0.02	0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW125I	02 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.04	0.17	0.21	0.39	0.42	<0.1	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	0.03	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.05	0.18	0.23	0.30	0.32	<0.1	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Field_D	<0.02	<0.05	<0.02	<0.01	0.05	0.18	0.23	0.31	0.34	<0.1	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Interlab_D	<0.01	<0.05	<0.01	<0.01	0.034	0.17	-	-	-	<0.05	0.03	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	0.022	0.035	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		17 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.03	0.19	0.22	0.31	0.34	<0.1	0.05	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.03	0.18	0.21	0.29	0.32	<0.1	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.03	0.15	0.18	0.24	0.24	<0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.13	0.15	0.21	0.23	<0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.15	0.17	0.24	0.24	<0.1	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.41	0.43	0.63	0.67	<0.1	0.09	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.04	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.02	0.01	1.06	1.07	1.94	2.12	<0.1	0.51	0.02	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.18	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW125S	02 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.24	0.26	0.72	0.75	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	0.05	<0.05	0.41	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.21	0.21	0.26	0.29	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		17 Aug 2021	Normal	<0.02	<0.05	<0.02	0.01	<0.01	0.96	0.96	1.78	1.97	<0.1	0.43	0.02	<0.02	0.09	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.19	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.05	<0.02	0.02	0.01	1.36	1.37	2.95	3.19	<0.1	0.54	0.03	<0.02	0.11	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.24	0.38	<0.05	0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	0.01	0.02	0.68	0.70	1.09	1.17	<0.1	0.21	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.08	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	0.01	0.02	0.58	0.60	0.84	0.89	<0.1	0.11	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.05	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	0.04	0.03	2.28	2.31	3.61	3.83	<0.1	0.75	0.04	<0.02	0.10	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.22	0.37	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	0.08	0.04	3.82	3.86	5.66	6.11	<0.1	0.87	0.09	<0.02	0.17	<0.02	<0.05	<0.02	<0.02	<0.02	0.02	0.43	0.59	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	0.11	0.05	4.05	4.10	7.06	7.71	<0.1	1.81	0.09	<0.02	0.23	<0.02	<0.05	<0.02	<0.02	<0.02	0.04	0.61	0.72	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
Off-Base	MW205S	03 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.02	0.04	0.04	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.02	0.04	0.04	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		19 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.02	0.04	0.04	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.02	0.04	0.04	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.03	0.05	0.05	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.03	0.03	0.06	0.06	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.03	0.03	0.06	0.06	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.02	0.04	0.04	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.01	0.03	0.03	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW212	03 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	0.06	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.3	<0.05	<0.02	<0.02	<0.07	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Field_D	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Interlab_D	<0.01	<0.05	<0.01	<0.01	<0.02	<0.01	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02

Table B.2
Groundwater Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																																
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							0.56	0.07	0.07	0.07																										
PFAS NEMP 3.0 2025 Recreational Water**							10	2	2	2																										
PFAS NEMP 3.0 2025 95% Eco Marine Water***							220	0.13																												
Monitoring Zone	Location Code	Date	Sample Type																																	
Off-Base	MW217	03 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		31 Mar 2021	Normal	<0.04	<0.10	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.20	<0.04	<0.04	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	<0.04	<0.04
		18 Aug 2021	Normal	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.25	<0.25	<0.10	<0.10
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.08	0.02	0.10	0.16	0.16	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Field_D	<0.02	<0.05	<0.02	<0.01	0.07	0.02	0.09	0.15	0.15	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Interlab_D	<0.01	<0.05	<0.01	<0.01	0.043	0.017	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	0.015	<0.01	0.035	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		22 Apr 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.01	0.01	0.01	0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.01	0.01	0.01	0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.01	0.03	0.06	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Field_D	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	0.03	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Interlab_D	<0.01	<0.05	<0.05	<0.01	<0.01	0.01	0.01	<0.05	<0.1	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Field_D	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.01	0.01	0.02	0.05	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW220S	03 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.04	0.64	0.68	1.19	1.32	<0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.13	0.16	<0.05	0.32	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Apr 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.05	1.04	1.09	1.40	1.63	<0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.23	0.29	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.50	0.52	0.70	0.82	<0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.12	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.01	0.47	0.48	0.61	0.69	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Nov 2020	Field_D	<0.02	<0.05	<0.02	<0.01	0.04	0.66	0.70	1.16	1.29	<0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.13	0.16	<0.05	0.28	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Nov 2020	Interlab_D	<0.01	<0.05	<0.01	<0.01	0.025	0.68	-	-	-	0.099	0.024	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	0.12	0.17	<0.01	0.31	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.13	0.13	0.17	0.19	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.68	0.70	0.90	1.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.13	0.20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.03	0.69	0.72	0.89	0.98	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.09	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.28	0.30	0.41	0.46	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.32	0.34	0.47	0.55	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Field_D	<0.02	<0.05	<0.02	<0.01	0.02	0.49	0.51	0.63	0.73	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.10	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Interlab_D	<0.01	<0.05	<0.01	<0.01	<0.02	0.33	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	0.074	0.11	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
	MW226	29 Oct 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.16	0.26	0.42	0.52	0.56	<0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		30 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.03	0.05	0.08	0.11	0.11	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		19 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.11	0.43	0.54	0.79	0.86	<0.1	0.08	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.09	0.32	0.41	0.63	0.69	<0.1	0.08	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.04	0.26	0.30	0.50	0.56	<0.1	0.07	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.05	0.20	0.25	0.38	0.41	<0.1	0.05	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.07	0.65	0.72	1.01	1.09	<0.1	0.11	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.01	0.06	0.07	0.13	0.13	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.02	0.12	0.14	0.28	0.33	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	MW232	03 Nov 2020	Normal	<0.10	<0.25	<0.10	<0.10	0.17	0.10	0.27	0.40	0.40	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.13	<0.10	<0.10	<0.25	<0.25	<0.25	<0.10	<0.10
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.10	0.09	0.19	0.34	0.34	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		20 Aug 2021	Normal	<0.04	<0.10	<0.04	<0.04	0.06	0.09	0.15	0.20	0.20	<0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.04	<0.04	<0.04	0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	<0.04	<0.04
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.10	0.09	0.19	0.36	0.36	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.10	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	0.07	0.09	0.16	0.30	0.30	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.13	0.12	0.25	0.42	0.42	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Field_D	<0.02	<0.05	<0.02	<0.01	0.14	0.12	0.26	0.42	0.42	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Interlab_D	<0.01	<0.05	<0.05	<0.01	0.10	0.10	0.2	0.34	0.34	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.07	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.17	0.10	0.27	0.34	0.34	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.10	0.06	0.16	0.28	0.28	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.11	0.07	0.18	0.24	0.24	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02

Table B.2
Groundwater Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																														
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							0.56	0.07	0.07	0.07																								
PFAS NEMP 3.0 2025 Recreational Water**							10	2	2	2																								
PFAS NEMP 3.0 2025 95% Eco Marine Water***							220	0.13																										
Monitoring Zone	Location Code	Date	Sample Type																															
Off-Base	MW233	03 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	0.15	0.15	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		07 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.02	<0.01	0.02	0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.08	0.04	0.12	0.12	0.12	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
	MW235S	03 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	0.02	<0.02	0.02	0.05	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	0.02	0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		18 Aug 2021	Normal	<0.02	<0.06	<0.02	<0.02	0.12	0.03	0.15	0.18	0.18	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02
		03 Mar 2022	Normal	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02
		25 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	0.01	0.01	0.04	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		08 Mar 2023	Normal	<0.10	<0.24	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.24	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.24	<0.24	<0.24	<0.10
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	0.04	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
	MW236S	03 Nov 2020	Normal	<0.02	<0.05	<0.02	0.01	0.16	0.21	0.37	0.46	0.49	<0.10	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.03	0.06	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		31 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	0.09	0.08	0.17	0.20	0.20	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		19 Aug 2021	Normal	<0.04	<0.11	<0.04	<0.04	0.15	0.16	0.31	0.36	0.36	<0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.11	<0.04	<0.04	<0.04	<0.04	<0.04	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.11	<0.11	<0.11	<0.04
		04 Mar 2022	Normal	<0.02	<0.05	<0.02	0.01	0.25	0.24	0.49	0.56	0.58	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	0.06	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		24 Aug 2022	Normal	<0.02	<0.05	<0.02	0.01	0.19	0.08	0.27	0.32	0.32	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.17	0.11	0.28	0.36	0.36	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		24 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	0.09	0.05	0.14	0.18	0.18	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.12	0.12	0.24	0.32	0.32	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02
		16 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	0.20	0.15	0.35	0.41	0.43	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	0.06	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02

Notes:
* = Drinking water guidelines apply only to Off-Base groundwater results.
** = Recreation guidelines apply to On-Base and Off-Base groundwater results.
*** = Ecological guidelines do not apply to On-Base or Off Base groundwater results.

Table B.3
Surface Water Field Parameters
October 2020 - October 2024
0229 Lavarack Barracks

			Field Parameters						
			Dissolved Oxygen	Temp (Field)	Field Redox Measurements	Corrected Redox Potential*	Electrical Conductivity	pH	
			mg/L	°C	mV	mV	µS/cm		
EQL									
Monitoring Zone	Location Code	Date							
Eastern PFAS Contamination Area	SW119	29 Oct 2020	8.3	35.7	5.3	205.3	328	6.87	
		29 Mar 2021	9.79	30.3	109.5	309.5	1,422	8.77	
		18 Aug 2021	12.31	24.3	46.4	246.4	10,548	9.15	
		22 Apr 2022	8.06	25	49.1	249.1	594	7.71	
		10 Mar 2023	7.23	32.6	176	376.0	714	7.23	
		22 Aug 2023	10.23	24.2	43.8	243.8	1,938	8.67	
		04 Mar 2024	4.17	32	820	1020.0	819	8.17	
		09 Oct 2024	3.52	33.3	-3.1	196.9	14258	8.76	
	SW120	29 Mar 2021	9.22	31.1	90.4	290.4	443.2	8.37	
		22 Apr 2022	7.07	24.9	81	281.0	155.7	7.51	
		04 Mar 2024	4.18	31.5	72.7	272.7	326.8	8.09	
Former Fire Station	SW109	29 Mar 2021	3.21	28.6	134.5	334.5	1,284	7.01	
		01 Mar 2022	2.47	28.8	-12.9	187.1	2,618	7.27	
		22 Aug 2022	5.02	21.6	86.5	286.5	1,139	7.82	
		06 Mar 2023	7.96	26.6	58.6	258.6	16.4	8.03	
		22 Aug 2023	2.54	22.8	140.3	340.3	903	7.38	
		04 Mar 2024	2.61	29.5	74.8	274.8	505	7.51	
	SW110	29 Mar 2021	4.71	29.5	42.8	242.8	968	6.82	
		01 Mar 2022	2.85	30.7	-10	190.0	4,157	7.27	
		26 Apr 2022	7.28	23.4	179.8	379.8	39.1	6.83	
		22 Aug 2022	2.99	23.4	61.64	261.6	2,849	7.74	
		15 Mar 2023	6.1	28.6	221.3	421.3	2,568	7.33	
		22 Aug 2023	3.52	23.6	53.2	253.2	2,180	7.36	
		04 Mar 2024	2.36	30	90.8	290.8	856	7.48	
Lavarack Golf Course & Sporting Field	SW129	26 Mar 2021	11.21	35.2	28.7	228.7	800	9.92	
		22 Apr 2022	9.65	25.7	75.5	275.5	235.9	8.51	
		06 Mar 2023	5.28	28.7	43	243.0	948	8.59	
		04 Mar 2024	6.03	37.5	61.8	261.8	805	9.19	
	SW130	26 Mar 2021	6.9	33.8	16.8	216.8	1,135	9.69	
		22 Apr 2022	9.34	25.8	100.8	300.8	620	7.35	
		08 Mar 2023	6.41	27.2	153.1	353.1	275.3	7.15	
		04 Mar 2024	6.41	38.3	71.5	271.5	954	9.51	
Top Middle and Lower Dams	SW139	29 Oct 2020	3.39	26.6	13	213.0	672	6.53	
		29 Mar 2021	4.85	30.1	108.5	308.5	443.4	7.26	
		22 Jun 2021	5.8	22.9	287.4	487.4	449.3	6.79	
		15 Aug 2021	4.45	23.4	169.6	369.6	596	6.97	
		01 Mar 2022	6.08	33.4	131	331.0	415.2	7.18	
		22 Aug 2022	2.8	22.5	100.8	300.8	520	8.2	
		06 Mar 2023	3.61	28.2	62.2	262.2	462.4	7.37	
		22 Aug 2023	5.32	23.8	68.7	268.7	539	7.21	
		04 Mar 2024	3.62	32.1	81.4	281.4	325.5	7.55	
		09 Oct 2024	0.28	24.8	-150	50.0	756	6.72	
	SW140	29 Oct 2020	5.16	31.7	20.2	220.2	737	6.54	
		29 Mar 2021	5.47	30.4	120.2	320.2	351.7	7.23	
		15 Aug 2021	4.08	22.5	161.9	361.9	572	7.07	
		15 Aug 2021	4.08	22.5	161.9	361.9	572	7.07	
		01 Mar 2022	5.97	32.4	189.6	389.6	328.6	6.99	
		22 Aug 2022	5.55	23.2	109.9	309.9	440.5	7.85	
		06 Mar 2023	4.42	27.8	53.9	253.9	343.7	7.21	
		22 Aug 2023	7.77	26	152.8	352.8	1,090	7.92	
		12 Mar 2024	5.82	29.8	178.4	378.4	297.5	6.53	
		09 Oct 2024	0.69	25.8	-129.8	70.2	855	7.15	
	SW144	13 May 2021	5.67	23.8	140.8	340.8	253.4	7.24	
		15 Aug 2021	5.58	23.4	162	362.0	251.8	6.85	
		15 Aug 2021	5.58	23.4	162	362.0	251.8	6.85	
		01 Mar 2022	2.94	31.6	83.7	283.7	337.7	7.35	
		22 Aug 2022	1.87	21.7	100	300.0	218.9	8.04	
		10 Mar 2023	2.65	31.5	124	324.0	247	6.86	
		22 Aug 2023	3.77	24.6	138.7	338.7	360	7.35	
		04 Mar 2024	1.35	30.1	69.8	269.8	262.1	6.9	
		09 Oct 2024	0.86	28.6	-120.7	79.3	745	6.99	
Remaining On-Base	SW113	28 Oct 2020	2.44	32.1	23.9	223.9	377.5	7.14	
		29 Mar 2021	7.31	28.8	128.2	328.2	324.2	7.28	
		01 Mar 2022	5.98	31.9	125.1	325.1	351	7.2	
		22 Aug 2022	11.97	23.3	97.5	297.5	405.3	8.24	
		10 Mar 2023	7.79	31.9	84.4	284.4	417.3	7.74	
		22 Aug 2023	7.42	26.3	46.9	246.9	589	8.1	
		04 Mar 2024	4.64	32.5	91.1	291.1	259.6	7.63	
	SW121	29 Mar 2021	3.49	27.5	13.5	213.5	1,621	7.07	
		15 Aug 2021	0.31	24.1	106.3	306.3	5,721	7.81	
		01 Mar 2022	3.89	31.6	-12.1	187.9	2,609	7.26	
		22 Aug 2022	4.17	23.8	-48.5	151.5	4,076	7.05	
		04 Mar 2024	1.71	29.1	63	263.0	813	7.34	
	SW126	26 Mar 2021	8.28	30.1	72.3	272.3	138.4	8.11	
		22 Apr 2022	5.26	26.4	116	316.0	114.7	7.14	
		08 Mar 2023	6.93	27.8	100.1	300.1	51.4	7.25	
		04 Mar 2024	3.55	31.2	56.9	256.9	134.2	7.5	
	SW128	26 Mar 2021	3.81	31.4	60.4	260.4	347.8	8.04	
		22 Apr 2022	6.08	26	127.1	327.1	155.7	7.77	
		06 Mar 2023	8.99	27.2	59.4	259.4	509.4	7.81	
		25 Aug 2023	4.39	22.2	73.1	273.1	506	7.78	
		04 Mar 2024	4.81	35.2	70.6	270.6	503	8.36	
	SW132	29 Oct 2020	3.28	27	-23.2	176.8	186.9	6.63	
		01 Apr 2021	3.27	25.6	96.4	296.4	677	7.03	
		01 Mar 2022	5.74	34.8	98.1	298.1	458.9	7.53	
		06 Mar 2023	2.98	28.8	46.5	246.5	423.3	7.14	
		25 Aug 2023	3.84	20.2	182.3	382.3	1,367	7.49	
		04 Mar 2024	2.52	31.9	80.9	280.9	292.6	7.21	
		09 Oct 2024	0.49	25	-117.2	82.8	2235	7.2	
	SW133	22 Apr 2022	7.16	24.8	103.3	303.3	130.7	7.38	
		06 Mar 2023	4.46	26.8	51.6	251.6	567	7.58	
		05 Mar 2024	7.27	27	150.4	350.4	27.6	7.02	

Table B.3
Surface Water Field Parameters
October 2020 - October 2024
0229 Lavarack Barracks

			Field Parameters					
			Dissolved Oxygen	Temp (Field)	Field Redox Measurements	Corrected Redox Potential*	Electrical Conductivity	pH
			mg/L	°C	mV	mV	µS/cm	
EQL								
Monitoring Zone	Location Code	Date						
Base Boundary	SW134	29 Oct 2020	8.47	34.7	11.6	211.6	434.2	7.59
		01 Apr 2021	5.92	25.7	67.4	267.4	300.9	7.94
		18 Aug 2021	1.69	24.6	72.2	272.2	415	7.19
		18 Aug 2021	1.69	24.6	72.2	272.2	415	7.19
		08 Mar 2023	4.84	27.1	144	344.0	3.1	7.04
		22 Aug 2023	5.19	28.6	133.4	333.4	252.3	7.29
		04 Mar 2024	3.13	37.4	82	282.0	220.3	7.25
		09 Oct 2024	5.32	32.3	-156.6	43.4	253.3	7.67
	SW135	28 Oct 2020	2.52	30.5	54	254.0	629	7.29
		29 Mar 2021	11.68	29.1	89.2	289.2	817	7.19
		22 Jun 2021	11.81	23.1	380.5	580.5	512	7.12
		18 Aug 2021	6.18	23.7	64.6	264.6	623	7.86
		18 Aug 2021	6.18	23.7	64.6	264.6	623	7.86
		01 Mar 2022	6	33	156.4	356.4	559	7.22
		22 Aug 2022	7.7	23.2	77.6	277.6	634	7.83
		06 Mar 2023	2.4	29	74.3	274.3	2,660	8.88
		22 Aug 2023	4.87	24.6	129.5	329.5	700	7.4
		04 Mar 2024	7.02	31.9	87.7	287.7	345.9	7.65
		09 Oct 2024	1.13	25.5	-139.5	60.5	869	7.65
	SW136	26 Mar 2021	10.98	36	69.5	269.5	803	9.17
		06 Mar 2023	4.45	28.5	141.8	341.8	925	8.2
		04 Mar 2024	4.48	31.8	75.8	275.8	511	7.96
Off-Base	SW203	02 Nov 2020	1.92	27.4	-57.1	142.9	21,227	6.55
		29 Mar 2021	3.83	26.8	103.4	303.4	3,772	7.07
		19 Aug 2021	2.48	21.3	-52	148.0	3,554	6.99
		19 Aug 2021	2.48	21.3	-52	148.0	3,554	6.99
		02 Mar 2022	3.83	32.4	-2	198.0	14,224	7.21
		22 Aug 2022	3.72	22.4	94.6	294.6	3,217	6.9
		06 Mar 2023	6.07	28.8	49.2	249.2	762	6.97
		21 Aug 2023	5.63	23	185.2	385.2	2,744	6.85
		04 Mar 2024	6.82	32.8	88.6	288.6	682	7.41
		09 Oct 2024	0	25.1	-147.8	52.2	10412	6.47
	SW205	02 Nov 2020	6.61	29.8	44.3	244.3	56,436	7.39
		29 Mar 2021	5.25	28.3	141.4	341.4	29,196	7.2
		18 Aug 2021	2.58	21.7	157.9	357.9	38,569	7.4
		18 Aug 2021	2.58	21.7	157.9	357.9	38,569	7.4
		02 Mar 2022	5.38	32.5	192	392.0	41,342	7.29
		22 Aug 2022	5.55	26.7	110.4	310.4	30,109	7.4
		09 Mar 2023	3.26	27.6	-13.1	186.9	1,435	7.69
		21 Aug 2023	7.78	26	197.5	397.5	27,076	7.42
		09 Oct 2024	0	27.7	14.1	214.1	35,583	7.55
	SW211	02 Nov 2020	13.35	33.3	56	256.0	14,005	8.05
		01 Apr 2021	5.67	25.5	95.3	295.3	7,077	7.35
		19 Aug 2021	9.13	23.5	121.6	321.6	6,585	7.63
		19 Aug 2021	9.13	23.5	121.6	321.6	6,585	7.63
		02 Mar 2022	0.92	29.8	169.2	369.2	13,071	7.15
		22 Aug 2022	2.24	16.2	70.1	270.1	8,717	7.18
		09 Mar 2023	4.61	29.7	9	209.0	1,067	7.53
		21 Aug 2023	4.78	19.1	245.4	445.4	7,012	7
		07 Mar 2024	5.85	27.8	79.7	279.7	829	7.42
		09 Oct 2024	0	23.9	11.6	211.6	10370	7.12
	SW212	02 Nov 2020	9.71	29.3	25.1	225.1	12,684	8.63
		01 Apr 2021	4.62	24.3	90.5	290.5	8,350	7.54
		19 Aug 2021	8.9	25.4	62.12	262.1	7,163	8.58
		19 Aug 2021	8.9	25.4	62.12	262.1	7,163	8.58
		02 Mar 2022	2.72	28.7	181	381.0	13,609	6.67
		22 Aug 2022	8.29	15.1	71.9	271.9	14,992	8.1
		09 Mar 2023	9.35	29.1	27.8	227.8	1,244	8.76
		21 Aug 2023	6.49	20	222.8	422.8	8,512	7.84
		07 Mar 2024	2.44	30.1	79	279.0	1,497	7.27
		09 Oct 2024	0.04	28.3	79.9	279.9	16,992	8.22
	SW217	02 Nov 2020	4.34	28.3	24	224.0	960	6.71
		29 Mar 2021	3.49	26.8	122.1	322.1	976	7.07
		19 Aug 2021	7.76	24.7	7.77	207.8	507	7.92
		19 Aug 2021	7.76	24.7	7.77	207.8	507	7.92
		02 Mar 2022	6.88	32.1	97.6	297.6	1,099	7.64
		22 Aug 2022	2.83	21.1	128.4	328.4	1,282	7.2
		06 Mar 2023	6.79	28.4	136.4	336.4	1,399	7.49
		21 Aug 2023	5.63	23.1	207.3	407.3	855	7.12
		04 Mar 2024	5.58	31.6	81.6	281.6	373	7.3
		09 Oct 2024	0	24	-95	105.0	738	7.51
	SW220	02 Nov 2020	4.19	30.9	1	201.0	1,917	7.15
		01 Apr 2021	3.63	23.7	4.19	204.2	2,148	7.26
		16 Aug 2021	6.89	22.6	116.6	316.6	3,620	8.24
		16 Aug 2021	6.89	22.6	116.6	316.6	3,620	8.24
		02 Mar 2022	7.18	34.9	128.7	328.7	2,005	7.47
		22 Aug 2022	12.66	26	75.4	275.4	3,665	8.58
		09 Mar 2023	2.14	26.7	199.3	399.3	648	6.42
		21 Aug 2023	6.19	25.8	140.4	340.4	2,876	7.97
		04 Mar 2024	5.96	34.1	73.7	273.7	641	7.67
		08 Oct 2024	0	29.3	121.4	321.4	3707	7.57
	SW227	03 Nov 2020	8.93	347.5	12.1	212.1	347.6	8.41
		26 Mar 2021	6.59	31.7	112.4	312.4	275.4	-
		18 Aug 2021	5.19	24.5	62.5	262.5	336.2	8.07
		18 Aug 2021	5.19	24.5	62.5	262.5	336.2	8.07
		01 Mar 2022	9.25	35.4	120.2	320.2	254.4	8.91
		22 Aug 2022	5.63	20.5	60.1	260.1	257.1	7.22
		08 Mar 2023	5	30.3	93.1	293.1	169.5	7.86
		22 Aug 2023	6.21	23.7	56.2	256.2	247.8	7.57
		07 Mar 2024	8.19	29.9	138.3	338.3	265.8	6.94
		15 Oct 2024	5.65	27.4	-38.2	161.8	227.9	8.13

Table B.3
Surface Water Field Parameters
October 2020 - October 2024
0229 Lavarack Barracks

			Field Parameters					
			Dissolved Oxygen	Temp (Field)	Field Redox Measurements	Corrected Redox Potential*	Electrical Conductivity	pH
			mg/L	°C	mV	mV	µS/cm	
EQL								
Monitoring Zone	Location Code	Date						
	SW232	02 Nov 2020	7.62	29.9	28.1	228.1	262.8	7.64
		29 Mar 2021	2.72	27.4	187.2	387.2	16,436	6.87
		16 Aug 2021	6.43	23.9	177.2	377.2	46,629	6.42
		16 Aug 2021	6.43	23.9	177.2	377.2	46,629	6.42
		02 Mar 2022	11.71	37.3	81.8	281.8	29,508	8.61
		22 Aug 2022	4.38	26.1	87.7	287.7	33,869	7.76
		09 Mar 2023	2.75	28.9	53.6	253.6	4,083	8.16
		21 Aug 2023	6.79	26.3	150.3	350.3	33,531	7.73
		04 Mar 2024	7.3	33.7	93	293.0	3,252	7.88
		08 Oct 2024	0	30.8	69.8	269.8	49,026	8.09
	SW233	02 Nov 2020	2.58	28.5	0.8	200.8	1,412	7.2
		29 Mar 2021	2.83	27.2	89	289.0	957	7.43
		16 Aug 2021	5.61	21.9	140.4	340.4	1,721	7.78
		16 Aug 2021	5.61	21.9	140.4	340.4	1,721	7.78
		02 Mar 2022	3.6	31.3	87.5	287.5	1,348	7.5
		22 Aug 2022	6.01	22.5	82.12	282.1	218.1	7.5
		06 Mar 2023	3.89	27.8	123.7	323.7	695	7.16
		21 Aug 2023	2.76	21.2	175	375.0	1,372	7.15
		04 Mar 2024	5.1	30.2	98.8	298.8	441.2	7.13
		08 Oct 2024	0	23.2	-69.3	130.7	1549	7.01
	SW242	02 Nov 2020	5.82	29.9	32.1	232.1	64,101	7.65
		29 Mar 2021	5.34	28.7	145.8	345.8	19,470	7.65
		15 Aug 2021	7.03	23.9	178.3	378.3	47,034	7.86
		15 Aug 2021	7.03	23.9	178.3	378.3	47,034	7.86
		02 Mar 2022	-	35.4	91.08	291.1	28,552	8.49
		22 Aug 2022	5.62	25.3	89.9	289.9	35,095	8.12
		09 Mar 2023	3.74	28.1	114.9	314.9	1,674	8.2
		21 Aug 2023	7.45	25.6	198.1	398.1	33,331	7.93
		04 Mar 2024	7.64	34.8	65.3	265.3	1,940	8.03
		08 Oct 2024	0.04	32.9	86.7	286.7	44,815	8.14
	SW243	02 Nov 2020	6.4	31.1	35.1	235.1	63,560	7.64
		29 Mar 2021	6.25	28.9	152.4	352.4	38,099	7.51
		15 Aug 2021	7.6	24.6	222.1	422.1	48,932	7.67
		15 Aug 2021	7.6	24.6	222.1	422.1	48,932	7.67
		02 Mar 2022	6.84	34.6	96.2	296.2	49,925	7.86
		22 Aug 2022	6.22	26.8	110.4	310.4	43,042	8.03
		09 Mar 2023	3.55	29.2	16	216.0	10,695	7.98
		21 Aug 2023	8.72	26	126.6	326.6	759	7.97
		04 Mar 2024	7.93	33.5	197	397.0	10,093	7.87
		08 Oct 2024	0	31.3	123.6	323.6	36,216	7.75
	SW244	03 Nov 2020	7.57	30.2	14.2	214.2	493.9	7.93
		26 Mar 2021	5.73	30.1	121.9	321.9	211.4	7.2
		18 Aug 2021	6.86	23.7	69.3	269.3	298.6	7.72
		18 Aug 2021	6.86	23.7	69.3	269.3	298.6	7.72
		28 Feb 2022	7.61	35.6	160.3	360.3	246.4	8.05
		22 Aug 2022	4.99	26.9	41.7	241.7	209.5	7.55
		08 Mar 2023	4.49	30.3	32.9	232.9	150.4	7.6
		22 Aug 2023	5.53	24.7	117.9	317.9	237.2	7.5
		07 Mar 2024	8.17	30.7	116	316.0	212.3	7.48
		15 Oct 2024	4.39	27	-31.2	168.8	216.3	7.95
	SW245	03 Nov 2020	7.3	31.8	13.9	213.9	297.5	7.58
		26 Mar 2021	5.6	29.1	152.5	352.5	173.4	7.06
		17 Aug 2021	4.38	21.3	86.8	286.8	282.9	7.45
		17 Aug 2021	4.38	21.3	86.8	286.8	282.9	7.45
		27 Feb 2022	6.98	30.5	188.8	388.8	156.3	7.4
		22 Aug 2022	5	23.9	66	266.0	190.5	7.3
		08 Mar 2023	5.1	29.3	169.3	369.3	185.9	7.18
		22 Aug 2023	6.08	21.7	65.9	265.9	207.4	7.4
		07 Mar 2024	5.93	29	166.6	366.6	212.6	6.56
		15 Oct 2024	6.26	26.6	-69.1	130.9	215.3	8.55

Notes:
mg/L = milligrams per litre
µS/cm = microsiemens per centimetre
mV = millivolt
ºC = degrees Celsius
- = data not available
* = Corrected Redox Potential was converted to a standard hydrogen electrode value by using the following equation (Corrected Redox Potential = measured YSI ORP + 200; YSI Environmental, 2005), assuming a field temperature of 22ºC.

Table B.4
Surface Water Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																																	
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							**0.56**	**0.07**	**0.07**	**0.07**																											
PFAS NEMP 3.0 2025 Recreational Water**							**10**	**2**	**2**	**2**																											
PFAS NEMP 3.0 2025 95% Eco Marine Water***							**220**	**0.13**																													
Monitoring Zone	**Location Code**	**Date**	**Sample Type**																																		
Eastern PFAS Contamination Area	SW119	29 Oct 2020	Normal	<0.02	<0.05	<0.02	**0.07**	**0.77**	**1.66**	**2.43**	**3.69**	**4.05**	<0.2	**0.62**	**0.06**	<0.02	**0.12**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.04**	**0.32**	**0.39**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	**0.02**	**0.42**	**0.33**	**0.75**	**1.01**	**1.06**	<0.1	**0.10**	<0.02	<0.02	**0.02**	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.05**	**0.12**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	**0.04**	**0.41**	**1.08**	**1.49**	**2.28**	**2.52**	<0.1	**0.38**	**0.04**	<0.02	**0.07**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.03**	**0.21**	**0.26**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Mar 2022	Normal	<0.02	<0.05	<0.02	**0.03**	**0.28**	**0.66**	**0.94**	**1.34**	**1.45**	<0.1	**0.18**	<0.02	<0.02	**0.03**	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.11**	**0.16**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		10 Mar 2023	Normal	<0.02	<0.05	<0.02	**0.06**	**0.68**	**0.80**	**1.48**	**2.24**	**2.44**	<0.1	**0.34**	**0.04**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.04**	**0.16**	**0.26**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Normal	<0.02	<0.05	<0.02	**0.04**	**0.46**	**0.55**	**1.01**	**1.47**	**1.47**	<0.1	**0.16**	**0.24**	<0.02	**0.02**	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	**0.03**	**0.42**	**0.41**	**0.83**	**1.16**	**1.25**	<0.1	**0.13**	**0.02**	<0.02	**0.03**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.02**	**0.07**	**0.12**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.02	<0.05	<0.02	**0.06**	**0.64**	**0.91**	**1.55**	**2.20**	**2.44**	<0.1	**0.25**	**0.03**	<0.02	**0.07**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.04**	**0.14**	**0.24**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW121	29 Oct 2020	Normal	<0.02	<0.05	<0.02	**0.09**	**1.19**	**2.13**	**3.32**	**4.65**	**5.09**	<0.3	**0.71**	**0.06**	<0.02	**0.12**	**0.06**	<0.05	<0.02	<0.02	<0.02	**0.06**	**0.32**	**0.35**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	**0.04**	**0.52**	**0.76**	**1.28**	**1.77**	**1.90**	<0.1	**0.23**	**0.02**	<0.02	**0.04**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.03**	**0.10**	**0.16**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Aug 2021	Normal	<0.02	<0.05	<0.02	**0.22**	**1.14**	**5.52**	**6.66**	**9.71**	**10.7**	**0.2**	**1.58**	**0.13**	<0.02	**0.21**	**0.06**	<0.05	<0.02	<0.02	<0.02	**0.13**	**0.76**	**0.71**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Mar 2022	Normal	<0.02	<0.05	<0.02	**0.03**	**0.36**	**0.46**	**0.82**	**1.13**	**1.20**	<0.1	**0.13**	<0.02	<0.02	**0.03**	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.07**	**0.12**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	**0.05**	**0.48**	**0.97**	**1.45**	**2.11**	**2.30**	<0.1	**0.29**	**0.03**	<0.02	**0.05**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.03**	**0.16**	**0.24**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	**0.02**	**0.36**	**0.34**	**0.70**	**0.88**	**0.93**	<0.1	**0.08**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.05**	**0.08**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.09	<0.22	<0.09	**0.32**	**2.84**	**9.12**	**12.0**	**16.0**	**17.8**	<0.4	**2.22**	**0.13**	<0.09	**0.32**	**0.18**	<0.22	<0.09	<0.09	<0.09	**0.21**	**1.10**	**1.02**	<0.09	<0.09	<0.09	<0.09	<0.22	<0.22	<0.22	<0.09	<0.09
Former Fire Station	SW109	29 Mar 2021	Normal	<0.50	<1.24	<0.50	**5.61**	**72.5**	**55.4**	**128**	**168**	**178**	<2.5	**20.4**	**2.43**	<0.50	**4.12**	<0.50	<1.24	<0.50	<0.50	<0.50	**3.53**	**7.00**	**7.25**	<0.50	<0.50	<0.50	<0.50	<1.24	<1.24	<1.24	<0.50	<0.50
		01 Mar 2022	Normal	<0.22	<0.56	<0.22	**11.3**	**89.2**	**103**	**192**	**276**	**298**	**4.0**	**41.1**	**4.36**	<0.22	**8.21**	<0.22	<0.56	<0.22	<0.22	<0.22	**5.13**	**16.1**	**15.1**	<0.22	<0.22	<0.22	<0.22	<0.56	<0.56	<0.56	<0.22	<0.22
		22 Aug 2022	Normal	**0.08**	<0.10	<0.04	**6.36**	**109**	**55.6**	**165**	**201**	**216**	**1.4**	**14.8**	**2.63**	<0.04	**3.34**	**0.33**	<0.10	<0.04	<0.04	<0.04	**5.98**	**8.48**	**7.41**	<0.05	**0.33**	**0.07**	<0.05	<0.10	<0.10	<0.10	**0.18**	<0.04
		06 Mar 2023	Normal	<0.10	<0.25	<0.10	**4.82**	**82.2**	**51.4**	**134**	**170**	**181**	**1.5**	**16.8**	**2.06**	<0.10	**3.48**	**0.21**	<0.25	<0.10	<0.10	<0.10	**3.57**	**6.83**	**7.23**	<0.10	**0.10**	<0.10	<0.10	<0.25	<0.25	<0.25	**0.41**	<0.10
		22 Aug 2023	Normal	<0.10	<0.24	<0.10	**3.55**	**47.2**	**30.8**	**78.0**	**105**	**112**	**1.5**	**12.0**	**1.61**	<0.10	**2.15**	<0.10	<0.24	<0.10	<0.10	<0.10	**1.06**	**5.69**	**6.25**	<0.10	<0.13	<0.10	<0.10	<0.24	<0.24	<0.24	<0.10	<0.10
		04 Mar 2024	Normal	**0.02**	<0.05	<0.02	**1.47**	**32.4**	**19.4**	**51.8**	**62.0**	**66.5**	**0.4**	**4.84**	**0.61**	<0.02	**0.96**	**0.10**	<0.05	<0.02	<0.02	<0.02	**1.63**	**2.59**	**1.96**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.09**	<0.02
		09 Oct 2024	Normal	<0.52	<1.30	<0.52	**2.54**	**161**	**35.3**	**196**	**221**	**230**	<2.6	**13.6**	**0.78**	<0.52	**2.49**	**0.78**	<1.30	<0.52	<0.52	<0.52	**1.97**	**4.15**	**5.19**	<0.52	<0.52	<0.52	<0.52	<1.30	<1.30	<1.30	<0.52	<0.52
	SW110	15 Mar 2023	Field_D	<0.10	<0.25	<0.10	**2.73**	**37.1**	**30.9**	**68.0**	**88.6**	**95.2**	**0.6**	**9.77**	**1.12**	<0.10	**1.98**	<0.10	<0.25	<0.10	<0.10	<0.10	**2.14**	**4.43**	**4.43**	<0.10	<0.10	<0.10	<0.10	<0.25	<0.25	<0.25	<0.10	<0.10
		15 Mar 2023	Interlab_D	<0.01	<0.05	<0.05	**2.7**	**32**	**29**	**61**	**77.91**	**83.95**	**0.99**	**7.5**	**1.3**	<0.01	**1.5**	**0.11**	<0.01	<0.01	<0.01	<0.01	**1.9**	**2.5**	**2.8**	<0.01	**0.10**	**0.02**	<0.01	<0.05	<0.05	<0.05	**0.07**	<0.05
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	**0.06**	**1.28**	**1.47**	**2.75**	**3.37**	**3.58**	<0.1	**0.25**	**0.02**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.05**	**0.16**	**0.23**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Mar 2022	Normal	<0.02	<0.06	<0.02	**1.14**	**17.0**	**13.0**	**30.0**	**40.3**	**43.3**	**0.6**	**4.98**	**0.48**	<0.02	**0.98**	<0.02	<0.06	<0.02	<0.02	<0.02	**0.81**	**2.18**	**2.13**	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.06	<0.02	<0.02
		26 Apr 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	**0.01**	**0.03**	**0.03**	**0.03**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	**2.54**	**47.7**	**25.4**	**73.1**	**89.2**	**95.6**	**0.6**	**7.21**	**0.96**	<0.02	**1.28**	**0.21**	<0.05	<0.02	<0.02	<0.02	**2.78**	**3.36**	**3.36**	<0.05	**0.11**	<0.05	<0.05	<0.05	<0.05	<0.05	**0.06**	<0.02
		07 Oct 2022	Normal	<0.05	<0.12	<0.05	**1.51**	**32.9**	**17.6**	**50.5**	**61.2**	**65.8**	**0.7**	**4.62**	**0.62**	<0.05	**1.01**	**0.14**	<0.12	<0.05	<0.05	<0.05	**1.98**	**2.56**	**2.20**	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		15 Mar 2023	Normal	<0.09	<0.23	<0.09	**2.67**	**36.9**	**33.3**	**70.2**	**91.1**	**98.4**	**0.7**	**9.79**	**1.16**	<0.09	**1.91**	<0.12	<0.23	<0.09	<0.09	<0.09	**2.40**	**4.93**	**4.68**	<0.09	<0.09	<0.09	<0.09	<0.23	<0.23	<0.23	<0.09	<0.09
		22 Aug 2023	Normal	<0.05	<0.12	<0.05	**1.48**	**23.2**	**15.0**	**38.2**	**49.9**	**53.3**	**0.6**	**4.72**	**0.67**	<0.05	**0.84**	**0.07**	<0.12	<0.05	<0.05	<0.05	**0.54**	**2.78**	**3.36**	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.05	<0.05
		04 Mar 2024	Normal	**0.02**	<0.05	<0.02	**1.24**	**28.3**	**16.2**	**44.5**	**52.5**	**56.2**	**0.3**	**3.67**	**0.47**	<0.02	**0.74**	**0.08**	<0.05	<0.02	<0.02	<0.02	**1.39**	**2.15**	**1.57**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.04**	<0.02
Lavarack Golf Course & Sporting Field	SW129	26 Mar 2021	Normal	<0.02	<0.05	<0.02	**0.03**	**0.29**	**0.31**	**0.60**	**0.90**	**0.94**	<0.1	**0.08**	**0.02**	<0.02	**0.09**	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.04**	**0.08**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Apr 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.06**	**0.09**	**0.09**	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Apr 2022	Field_D	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.06**	**0.09**	**0.09**	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Apr 2022	Interlab_D	<0.01	<0.05	<0.01	<0.01	**0.031**	**0.051**	-	-	-	<0.05	**0.01**	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	**0.015**	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		06 Mar 2023	Normal	<0.02	<0.05	<0.02	**0.04**	**0.20**	**0.31**	**0.51**	**1.10**	**1.14**	**0.1**	**0.15**	**0.04**	<0.02	**0.17**	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.04**	**0.09**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		06 Mar 2023	Interlab_D	<0.01	<0.05	<0.05	**0.03**	**0.16**	**0.23**	**0.39**	**0.81**	**0.84**	**0.10**	**0.09**	**0.04**	<0.01	**0.11**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.02**	**0.05**	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		06 Mar 2023	Field_D	<0.02	<0.05	<0.02	**0.04**	**0.20**	**0.30**	**0.50**	**1.11**	**1.15**	**0.1**	**0.15**	**0.05**	<0.02	**0.17**	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.04**	**0.10**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	**0.02**	**0.11**	**0.18**	**0.29**	**0.53**	**0.55**	<0.1	**0.06**	**0.02**	<0.02	**0.08**	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.02**	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW130	26 Mar 2021	Normal	<0.02	<0.05	<0.02	**0.03**	**0.69**	**0.58**	**1.27**	**1.56**	**1.68**	<0.1	**0.12**	<0.02	<0.02	**0.03**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.03**	**0.09**	**0.11**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Apr 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.04**	**0.19**	**0.23**	**0.32**	**0.36**	<0.1	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.04**	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.08**	**0.23**	**0.31**	**0.41**	**0.45**	<0.1	**0.04**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.04**	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	**0.02**	**0.40**	**0.40**	**0.80**	**0.98**	**1.04**	<0.1	**0.06**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.06**	**0.10**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02

Table B.4
Surface Water Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																																
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							**0.56**	**0.07**	**0.07**	**0.07**																										
PFAS NEMP 3.0 2025 Recreational Water**							**10**	**2**	**2**	**2**																										
PFAS NEMP 3.0 2025 95% Eco Marine Water***							**220**	**0.13**																												
Monitoring Zone	**Location Code**	**Date**	**Sample Type**																																	
Top Middle and Lower Dams	SW139	29 Oct 2020	Normal	<0.02	<0.05	<0.02	**0.04**	**0.99**	**0.84**	**1.83**	**2.34**	**2.52**	<0.1	**0.25**	**0.03**	<0.02	**0.05**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.04**	**0.14**	**0.14**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Oct 2020	Field_D	<0.02	<0.05	<0.02	**0.04**	**0.98**	**0.84**	**1.82**	**2.33**	**2.51**	<0.1	**0.24**	**0.03**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.04**	**0.14**	**0.14**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Oct 2020	Interlab_D	<0.01	<0.05	<0.01	**0.038**	**1.1**	**0.77**	-	-	-	**0.062**	**0.19**	**0.02**	<0.01	**0.043**	<0.01	<0.02	<0.02	<0.01	<0.01	**0.025**	**0.089**	**0.12**	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	**0.07**	**1.56**	**0.84**	**2.40**	**2.99**	**3.16**	<0.1	**0.29**	**0.03**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.06**	**0.11**	**0.14**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Field_D	<0.02	<0.05	<0.02	**0.07**	**1.42**	**0.84**	**2.26**	**2.83**	**3.00**	<0.1	**0.28**	**0.03**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.06**	**0.11**	**0.13**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Interlab_D	<0.01	<0.05	<0.01	**0.054**	**1.2**	**0.81**	-	-	-	<0.05	**0.22**	**0.024**	<0.01	**0.045**	<0.01	<0.02	<0.02	<0.01	<0.01	**0.036**	**0.088**	**0.11**	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		22 Jun 2021	Normal	<0.02	<0.05	<0.02	**0.10**	**1.60**	**1.18**	**2.78**	**3.55**	**3.79**	<0.1	**0.37**	**0.05**	<0.02	**0.07**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.07**	**0.17**	**0.18**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Aug 2021	Normal	<0.02	<0.05	<0.02	**0.10**	**1.78**	**1.28**	**3.06**	**3.80**	**4.05**	<0.1	**0.35**	**0.04**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.08**	**0.17**	**0.19**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Mar 2022	Normal	<0.02	<0.05	<0.02	**0.03**	**0.55**	**0.31**	**0.86**	**1.02**	**1.06**	<0.1	**0.08**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.04**	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Mar 2022	Field_D	<0.02	<0.05	<0.02	**0.03**	**0.54**	**0.31**	**0.85**	**1.01**	**1.05**	<0.1	**0.08**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.04**	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Mar 2022	Interlab_D	<0.01	<0.05	<0.01	**0.02**	**0.59**	**0.34**	-	-	-	<0.05	**0.08**	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	**0.013**	**0.039**	**0.054**	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	**0.06**	**1.06**	**0.76**	**1.82**	**2.30**	**2.45**	<0.1	**0.21**	**0.03**	<0.02	**0.04**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.05**	**0.10**	**0.14**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		06 Mar 2023	Normal	<0.02	<0.05	<0.02	**0.08**	**1.34**	**1.00**	**2.34**	**2.95**	**3.14**	<0.1	**0.28**	**0.03**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.06**	**0.13**	**0.16**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Normal	<0.02	<0.05	<0.02	**0.09**	**1.35**	**1.04**	**2.39**	**3.02**	**3.22**	<0.2	**0.29**	**0.05**	<0.02	**0.04**	**0.02**	<0.05	<0.02	<0.02	<0.02	**0.06**	**0.12**	**0.16**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.18**	**0.13**	**0.31**	**0.37**	**0.37**	<0.1	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.02	<0.05	<0.02	**0.09**	**1.73**	**1.29**	**3.02**	**3.82**	**4.14**	<0.1	**0.36**	**0.04**	<0.02	**0.08**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.08**	**0.16**	**0.23**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Field_D	<0.02	<0.05	<0.02	**0.08**	**1.24**	**1.12**	**2.36**	**3.01**	**3.22**	<0.1	**0.31**	**0.04**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.06**	**0.15**	**0.16**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Interlab_D	<0.01	<0.05	<0.05	**0.09**	**1.7**	**1.7**	**3.4**	**4.18**	**4.59**	**0.05**	**0.39**	**0.05**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.11**	**0.20**	**0.20**	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
	SW140	29 Oct 2020	Normal	<0.02	<0.05	<0.02	**0.06**	**1.63**	**0.89**	**2.52**	**3.03**	**3.20**	<0.1	**0.25**	**0.02**	<0.02	**0.05**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.05**	**0.12**	**0.13**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	**0.03**	**0.62**	**0.42**	**1.04**	**1.29**	**1.36**	<0.1	**0.12**	<0.02	<0.02	**0.03**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.02**	**0.05**	**0.07**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Aug 2021	Normal	<0.02	<0.05	<0.02	**0.09**	**1.57**	**1.12**	**2.69**	**3.39**	**3.61**	<0.1	**0.34**	**0.04**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.06**	**0.16**	**0.17**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Aug 2021	Field_D	<0.02	<0.05	<0.02	**0.10**	**1.62**	**1.14**	**2.76**	**3.50**	**3.73**	<0.1	**0.35**	**0.04**	<0.02	**0.07**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.07**	**0.16**	**0.18**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Aug 2021	Interlab_D	<0.01	<0.05	<0.01	**0.063**	**1.3**	**0.82**	-	-	-	**0.07**	**0.3**	**0.029**	<0.01	**0.056**	<0.01	<0.02	<0.02	<0.01	<0.01	**0.042**	**0.11**	**0.15**	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		01 Mar 2022	Normal	<0.02	<0.05	<0.02	**0.02**	**0.37**	**0.21**	**0.58**	**0.69**	**0.72**	<0.1	**0.05**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.03**	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	**0.06**	**1.09**	**0.79**	**1.88**	**2.35**	**2.50**	<0.1	**0.22**	**0.03**	<0.02	**0.04**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.05**	**0.10**	**0.12**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		06 Mar 2023	Normal	<0.02	<0.05	<0.02	**0.05**	**0.91**	**0.61**	**1.52**	**1.87**	**1.98**	<0.1	**0.17**	<0.02	<0.02	**0.03**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.04**	**0.07**	**0.10**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Normal	<0.02	<0.05	<0.02	**0.09**	**2.66**	**1.59**	**4.25**	**4.99**	**5.25**	**0.1**	**0.25**	**0.03**	<0.02	**0.04**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.09**	**0.17**	**0.23**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.19**	**0.11**	**0.30**	**0.35**	**0.35**	<0.1	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.02	<0.05	<0.02	**0.08**	**1.52**	**1.11**	**2.63**	**3.35**	**3.64**	<0.1	**0.32**	**0.04**	<0.02	**0.07**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.06**	**0.16**	**0.21**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Field_D	<0.02	<0.05	<0.02	**0.08**	**1.24**	**0.99**	**2.23**	**2.82**	**3.02**	<0.1	**0.28**	**0.03**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.06**	**0.14**	**0.14**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Interlab_D	<0.01	<0.05	<0.05	**0.17**	**3.5**	**3.1**	**6.6**	**7.95**	**8.61**	**0.10**	**0.65**	**0.09**	<0.01	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	**0.19**	**0.33**	**0.34**	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
	SW144	13 May 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.07**	**0.06**	**0.13**	**0.13**	**0.13**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.09**	**0.09**	**0.18**	**0.21**	**0.21**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.07**	**0.06**	**0.13**	**0.13**	**0.13**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.05**	**0.07**	**0.12**	**0.12**	**0.12**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		10 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.11**	**0.08**	**0.19**	**0.21**	**0.21**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.09**	**0.10**	**0.19**	**0.22**	**0.22**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.13**	**0.09**	**0.22**	**0.28**	**0.28**	<0.1	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.16**	**0.14**	**0.30**	**0.37**	**0.37**	<0.1	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
Remaining On-Base	SW113	28 Oct 2020	Normal	<0.02	<0.05	<0.02	**0.03**	**0.22**	**0.19**	**0.41**	**1.00**	**1.03**	**0.2**	**0.20**	**0.02**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.03**	**0.08**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.10**	**0.16**	**0.26**	**0.31**	**0.33**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.02**	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.08**	**0.14**	**0.22**	**0.26**	**0.26**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.05**	**0.15**	**0.20**	**0.25**	**0.27**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.02**	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Field_D	<0.02	<0.05	<0.02	<0.01	**0.08**	**0.17**	**0.25**	**0.36**	**0.39**	<0.1	**0.05**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.03**	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Interlab_D	<0.01	<0.05	<0.05	**0.01**	**0.12**	**0.31**	**0.43**	**0.66**	**0.72**	**0.05**	**0.08**	<0.01	<0.01	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.02**	**0.08**	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		10 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.09**	**0.15**	**0.24**	**0.30**	**0.30**	<0.1	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.07**	**0.16**	**0.23**	**0.34**	**0.36**	<0.1	**0.05**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.02**	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.05**	**0.05**	**0.10**	**0.10**	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Field_D	<0.02	<0.05	<0.02	<0.01	**0.05**	**0.06**	**0.11**	**0.13**	**0.13**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW120	29 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.12**	**0.17**	**0.29**	**0.34**	**0.36**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.02**	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Apr 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.04**	**0.05**	**0.09**	**0.11**	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.07**	**0.10**	**0.17**	**0.22**	**0.22**	<0.1	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02

Table B.4
Surface Water Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																																
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							**0.56**	**0.07**	**0.07**	**0.07**																										
PFAS NEMP 3.0 2025 Recreational Water**							**10**	**2**	**2**	**2**																										
PFAS NEMP 3.0 2025 95% Eco Marine Water***							**220**	**0.13**																												
Monitoring Zone	**Location Code**	**Date**	**Sample Type**																																	
Base Boundary	SW126	04 Mar 2024	Field_D	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		26 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Apr 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW128	26 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.10**	**0.05**	**0.15**	**0.15**	**0.15**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Apr 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.04**	**0.02**	**0.06**	**0.06**	**0.06**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		06 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.13**	**0.21**	**0.34**	**0.46**	**0.49**	<0.1	**0.05**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.03**	**0.07**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.02**	**0.05**	**0.05**	**0.05**	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2023	Field_D	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.02**	**0.05**	**0.05**	**0.05**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2023	Interlab_D	<0.01	<0.05	<0.05	<0.01	**0.03**	**0.02**	**0.05**	**0.06**	<0.1	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.01**	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.07**	**0.06**	**0.13**	**0.16**	**0.16**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW132	25 Aug 2023	Field_D	<0.02	<0.05	<0.02	**0.14**	**2.38**	**2.45**	**4.83**	**5.97**	**6.38**	**0.1**	**0.44**	**0.05**	<0.02	**0.07**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.13**	**0.28**	**0.34**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2023	Interlab_D	<0.01	<0.05	<0.05	**0.15**	**2.0**	**2.3**	**4.3**	**5.33**	**5.76**	**0.12**	**0.39**	**0.06**	<0.01	**0.06**	<0.01	<0.01	<0.01	<0.01	<0.01	**0.15**	**0.18**	**0.25**	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
		29 Oct 2020	Normal	<0.02	<0.05	<0.02	**0.03**	**0.74**	**0.38**	**1.12**	**1.33**	**1.39**	<0.1	**0.09**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.06**	**0.09**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Apr 2021	Normal	<0.02	<0.05	<0.02	**0.08**	**1.39**	**1.16**	**2.55**	**3.24**	**3.50**	<0.1	**0.27**	**0.04**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.06**	**0.20**	**0.24**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Mar 2022	Normal	<0.02	<0.05	<0.02	**0.03**	**0.58**	**0.41**	**0.99**	**1.19**	**1.25**	<0.1	**0.09**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.06**	**0.08**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		06 Mar 2023	Normal	<0.02	<0.05	<0.02	**0.06**	**1.20**	**0.82**	**2.02**	**2.48**	**2.63**	<0.1	**0.20**	**0.02**	<0.02	**0.04**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.05**	**0.10**	**0.14**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2023	Normal	<0.02	<0.05	<0.02	**0.14**	**2.96**	**2.52**	**5.48**	**6.63**	**7.07**	**0.1**	**0.48**	**0.05**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.15**	**0.29**	**0.32**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.23**	**0.13**	**0.36**	**0.42**	**0.42**	<0.1	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.02	<0.05	<0.02	**0.21**	**3.06**	**3.25**	**6.31**	**8.14**	**9.13**	**0.1**	**0.70**	**0.08**	<0.02	**0.13**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.25**	**0.51**	**0.61**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW133	22 Apr 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.04**	**0.04**	**0.08**	**0.08**	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		06 Mar 2023	Normal	<0.02	<0.05	<0.02	**0.01**	**0.26**	**0.41**	**0.67**	**0.83**	**0.87**	<0.1	**0.06**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.04**	**0.09**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		05 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW134	29 Oct 2020	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Apr 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Apr 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW135	22 Jun 2021	Field_D	<0.02	<0.05	<0.02	**0.04**	**2.28**	**1.00**	**3.28**	**3.52**	**3.67**	<0.1	**0.08**	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.02	<0.02	<0.02	**0.04**	**0.08**	**0.12**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Jun 2021	Interlab_D	<0.01	<0.05	<0.01	**0.023**	**1.9**	**0.82**	-	-	-	<0.05	**0.049**	<0.01	<0.01	<0.02	**0.025**	<0.02	<0.02	<0.01	<0.01	**0.028**	**0.053**	**0.092**	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01
		28 Oct 2020	Normal	<0.02	<0.05	<0.02	<0.01	**0.52**	**0.16**	**0.68**	**0.76**	**0.76**	<0.1	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	**0.07**	**3.62**	**2.02**	**5.64**	**6.22**	**6.49**	<0.1	**0.25**	**0.03**	<0.02	**0.05**	**0.05**	<0.05	<0.02	<0.02	<0.02	**0.09**	**0.13**	**0.18**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Jun 2021	Normal	<0.02	<0.05	<0.02	**0.03**	**2.44**	**1.02**	**3.46**	**3.69**	**3.86**	<0.1	**0.08**	<0.02	<0.02	<0.02	**0.04**	<0.05	<0.02	<0.02	<0.02	**0.05**	**0.08**	**0.12**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.19**	**0.09**	**0.28**	**0.30**	**0.30**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.25**	**0.15**	**0.40**	**0.46**	**0.46**	<0.1	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.30**	**0.20**	**0.50**	**0.56**	**0.58**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.02**	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		06 Mar 2023	Normal	<0.02	<0.05	<0.02	**0.06**	**0.32**	**0.81**	**1.13**	**1.77**	**1.92**	<0.1	**0.28**	**0.03**	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.03**	**0.12**	**0.21**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.32**	**0.32**	**0.64**	**0.73**	**0.78**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.05**	**0.09**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.09**	**0.12**	**0.21**	**0.24**	**0.24**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.41**	**0.49**	**0.90**	**1.00**	**1.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.06**	**0.10**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW136	06 Mar 2023	Field_D	<0.02	<0.05	<0.02	**0.01**	**0.38**	**0.31**	**0.69**	**0.84**	**0.87**	<0.1	**0.08**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.03**	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		06 Mar 2023	Interlab_D	<0.01	<0.05	<0.05	<0.01	**0.33**	**0.25**	**0.58**	**0.66**	**0.68**	<0.05	**0.05**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.02**	**0.03**	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
		26 Mar 2021	Normal	<0.02	<0.05	<0.02	**0.01**	**0.36**	**0.16**	**0.52**	**0.62**	**0.62**	<0.1	**0.05**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.25**	**0.10**	**0.35**	**0.40**	**0.40**	<0.1	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		06 Mar 2023	Normal	<0.02	<0.05	<0.02	**0.01**	**0.30**	**0.31**	**0.61**	**0.75**	**0.78**	<0.1	**0.07**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.03**	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.28**	**0.14**	**0.42**	**0.48**	**0.48**	<0.1	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02

Table B.4
Surface Water Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																																	
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							**0.56**	**0.07**	**0.07**	**0.07**																											
PFAS NEMP 3.0 2025 Recreational Water**							**10**	**2**	**2**	**2**																											
PFAS NEMP 3.0 2025 95% Eco Marine Water***							**220**	**0.13**																													
Monitoring Zone	**Location Code**	**Date**	**Sample Type**																																		
Off-Base	SW203	02 Mar 2022	Interlab_D	<0.01	<0.05	<0.01	**0.015**	**0.25**	**0.23**	-	-	-	<0.05	**0.025**	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	**0.025**	**0.054**	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		02 Nov 2020	Normal	<0.02	<0.05	<0.02	**0.01**	**0.17**	**0.19**	**0.36**	**0.46**	**0.48**	<0.1	**0.04**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.02**	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	**0.02**	**0.42**	**0.31**	**0.73**	**0.89**	**0.93**	<0.1	**0.06**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.04**	**0.08**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Interlab_D	<0.01	<0.05	<0.01	**0.015**	**0.32**	**0.29**	-	-	-	<0.05	**0.038**	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	**0.011**	**0.029**	**0.063**	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		29 Mar 2021	Field_D	<0.02	<0.05	<0.02	**0.02**	**0.46**	**0.33**	**0.79**	**0.95**	**1.01**	<0.1	**0.06**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.02**	**0.04**	**0.08**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		19 Aug 2021	Normal	<0.02	<0.05	<0.02	**0.02**	**0.36**	**0.37**	**0.73**	**0.87**	**0.92**	<0.1	**0.04**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.05**	**0.08**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.05	<0.02	**0.01**	**0.30**	**0.23**	**0.53**	**0.63**	**0.65**	<0.1	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.02**	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Field_D	<0.02	<0.05	<0.02	**0.01**	**0.26**	**0.21**	**0.47**	**0.56**	**0.58**	<0.1	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.02**	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.21**	**0.19**	**0.40**	**0.48**	**0.51**	<0.1	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.03**	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		06 Mar 2023	Normal	<0.02	<0.05	<0.02	**0.04**	**1.05**	**0.75**	**1.80**	**2.16**	**2.30**	<0.1	**0.16**	<0.02	<0.02	**0.03**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.05**	**0.09**	**0.13**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		21 Aug 2023	Normal	<0.02	<0.05	<0.02	**0.02**	**0.40**	**0.40**	**0.80**	**0.99**	**1.06**	<0.1	**0.06**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.07**	**0.11**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	**0.01**	**0.20**	**0.14**	**0.34**	**0.41**	**0.41**	<0.1	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.02	<0.05	<0.02	**0.06**	**1.28**	**1.29**	**2.57**	**3.15**	**3.46**	<0.1	**0.20**	**0.03**	<0.02	**0.04**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.09**	**0.15**	**0.25**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW205	02 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	<0.02	**0.02**	**0.02**	**0.02**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	<0.02	**0.02**	**0.02**	**0.02**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		19 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.01**	**0.01**	**0.02**	**0.02**	**0.02**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	**0.03**	**0.05**	**0.05**	**0.05**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.05	<0.13	<0.05	<0.05	**0.09**	<0.05	**0.09**	**0.09**	**0.09**	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.13	<0.13	<0.13	<0.05	<0.05
		21 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	<0.01	**0.02**	**0.02**	**0.02**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.02**	**0.05**	**0.05**	**0.05**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW211	01 Apr 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.03**	<0.02	**0.03**	**0.05**	**0.05**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		19 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.02**	**0.05**	**0.08**	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	<0.01	**0.02**	**0.02**	**0.02**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.04**	**0.05**	**0.09**	**0.11**	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	**0.02**	**0.04**	**0.06**	**0.06**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.06**	**0.09**	**0.11**	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.03**	<0.04	<0.04	<0.04	<0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW212	01 Apr 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	**0.06**	**0.08**	**0.11**	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		19 Aug 2021	Normal	<0.02	<0.05	<0.02	**0.02**	**0.07**	**0.04**	**0.11**	**0.21**	**0.21**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.08**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	**0.02**	**0.04**	**0.08**	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		25 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.01**	**0.04**	**0.05**	**0.09**	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	**0.01**	**0.10**	**0.18**	**0.28**	**0.46**	**0.48**	<0.1	**0.05**	<0.02	<0.02	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.02**	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.03**	**0.06**	**0.06**	**0.06**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.04**	**0.07**	**0.07**	**0.07**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.02**	**0.05**	**0.09**	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW217	02 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Nov 2020	Field_D	<0.02	<0.05	<0.02	<0.01	**0.01**	<0.02	**0.01**	**0.01**	**0.01**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Nov 2020	Interlab_D	<0.01	<0.05	<0.01	<0.01	<0.02	<0.01	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	**0.03**	**0.05**	**0.05**	**0.05**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		19 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.01**	<0.01	**0.01**	**0.01**	**0.01**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	**0.02**	**0.04**	**0.04**	**0.04**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Field_D	<0.02	<0.05	<0.02	<0.01	<0.01	**0.01**	**0.01**	**0.01**	**0.01**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Interlab_D	<0.01	<0.05	<0.01	<0.01	<0.02	**0.011**	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	**0.011**	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		06 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	**0.04**	**0.06**	**0.09**	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		06 Mar 2023	Field_D	<0.02	<0.05	<0.02	<0.01	**0.02**	**0.04**	**0.06**	**0.09**	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		06 Mar 2023	Interlab_D	<0.01	<0.05	<0.05	<0.01	<0.01	**0.04**	**0.04**	**0.07**	<0.1	<0.05	**0.02**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.01**	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		21 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.01**	<0.01	**0.01**	**0.01**	**0.01**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Field_D	<0.02	<0.05	<0.02	<0.01	**0.01**	**0.01**	**0.02**	**0.02**	**0.02**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.01**	<0.01	**0.01**	**0.01**	**0.01**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02

Table B.4
Surface Water Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																															
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							**0.56**	**0.07**	**0.07**	**0.07**																									
PFAS NEMP 3.0 2025 Recreational Water**							**10**	**2**	**2**	**2**																									
PFAS NEMP 3.0 2025 95% Eco Marine Water***							**220**	**0.13**																											
Monitoring Zone	**Location Code**	**Date**	**Sample Type**																																
Off-Base	SW220	02 Nov 2020	Normal	<0.02	<0.05	<0.02	**0.02**	**0.45**	**0.37**	**0.82**	**0.99**	**1.03**	<0.1	**0.08**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.04**	**0.07**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		01 Apr 2021	Normal	<0.02	<0.05	<0.02	**0.02**	**0.52**	**0.73**	**1.25**	**1.55**	**1.67**	<0.1	**0.14**	<0.02	<0.02	**0.02**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.03**	**0.09**	**0.12**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Aug 2021	Normal	<0.02	<0.05	<0.02	**0.04**	**0.54**	**1.23**	**1.77**	**2.29**	**2.46**	<0.1	**0.24**	**0.02**	<0.02	**0.03**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.04**	**0.13**	**0.19**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.05	<0.02	**0.04**	**0.91**	**1.05**	**1.96**	**2.35**	**2.53**	<0.1	**0.19**	<0.02	<0.02	**0.02**	**0.03**	<0.05	<0.02	<0.02	<0.02	**0.04**	**0.11**	**0.14**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	**0.04**	**0.74**	**1.34**	**2.08**	**2.57**	**2.80**	<0.1	**0.22**	**0.02**	<0.02	**0.04**	**0.04**	<0.05	<0.02	<0.02	<0.02	**0.05**	**0.14**	**0.17**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.27**	**0.36**	**0.63**	**0.76**	**0.80**	<0.1	**0.06**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.04**	**0.07**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		21 Aug 2023	Normal	<0.02	<0.05	<0.02	**0.06**	**0.97**	**1.77**	**2.74**	**3.53**	**3.81**	<0.1	**0.36**	**0.03**	<0.02	**0.05**	**0.02**	<0.05	<0.02	<0.02	<0.02	**0.03**	**0.23**	**0.29**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.18**	**0.19**	**0.37**	**0.44**	**0.44**	<0.1	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Oct 2024	Normal	<0.02	<0.05	<0.02	**0.03**	**0.48**	**0.96**	**1.44**	**1.89**	**2.06**	<0.1	**0.19**	<0.02	<0.02	**0.06**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.03**	**0.10**	**0.17**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW227	03 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		26 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		28 Feb 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		15 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW232	02 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	**0.09**	<0.02	**0.09**	**0.09**	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.05**	**0.05**	**0.10**	**0.13**	**0.13**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.01**	<0.02	**0.01**	**0.01**	**0.01**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.04**	**0.05**	**0.09**	**0.09**	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.04**	**0.07**	**0.09**	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.08**	**0.11**	**0.19**	**0.25**	**0.25**	<0.1	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		21 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.04**	**0.05**	**0.09**	**0.11**	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		21 Aug 2023	Field_D	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.05**	**0.08**	**0.08**	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		21 Aug 2023	Interlab_D	<0.01	<0.05	<0.05	<0.01	**0.02**	**0.05**	**0.07**	**0.09**	<0.1	<0.05	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.01**	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.05**	**0.05**	**0.10**	**0.10**	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.03**	**0.01**	**0.04**	**0.04**	**0.04**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW233	02 Nov 2020	Normal	<0.02	<0.05	<0.02	**0.01**	**0.24**	**0.18**	**0.42**	**0.50**	**0.52**	<0.1	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.02**	**0.04**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	**0.03**	**0.69**	**0.44**	**1.13**	**1.38**	**1.47**	<0.1	**0.11**	<0.02	<0.02	**0.02**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.03**	**0.06**	**0.09**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Aug 2021	Normal	<0.02	<0.05	<0.02	**0.05**	**0.61**	**0.57**	**1.18**	**1.54**	**1.65**	<0.1	**0.16**	**0.02**	<0.02	**0.02**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.03**	**0.08**	**0.11**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.05	<0.02	**0.02**	**0.47**	**0.27**	**0.74**	**0.87**	**0.90**	<0.1	**0.05**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.03**	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	**0.05**	**0.68**	**0.68**	**1.36**	**1.75**	**1.88**	<0.1	**0.15**	**0.02**	<0.02	**0.04**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.04**	**0.09**	**0.13**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Field_D	<0.02	<0.05	<0.02	**0.04**	**0.66**	**0.67**	**1.33**	**1.72**	**1.85**	<0.1	**0.16**	**0.02**	<0.02	**0.04**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.04**	**0.09**	**0.13**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		23 Aug 2022	Interlab_D	<0.01	<0.05	<0.01	**0.045**	**0.63**	**0.78**	-	-	-	<0.05	**0.16**	**0.019**	<0.01	**0.035**	<0.01	<0.02	<0.02	<0.01	<0.01	**0.026**	**0.1**	**0.13**	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		06 Mar 2023	Normal	<0.02	<0.05	<0.02	**0.06**	**1.12**	**0.81**	**1.93**	**2.38**	**2.53**	<0.1	**0.20**	**0.02**	<0.02	**0.03**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.05**	**0.10**	**0.14**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		21 Aug 2023	Normal	<0.02	<0.05	<0.02	**0.05**	**0.54**	**0.53**	**1.07**	**1.44**	**1.53**	<0.1	**0.16**	<0.02	<0.02	**0.02**	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.09**	**0.14**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	**0.01**	**0.33**	**0.23**	**0.56**	**0.66**	**0.69**	<0.1	**0.04**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	**0.03**	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Oct 2024	Normal	<0.02	<0.05	<0.02	**0.05**	**0.92**	**0.77**	**1.69**	**2.12**	**2.27**	<0.1	**0.20**	**0.02**	<0.02	**0.04**	<0.02	<0.05	<0.02	<0.02	<0.02	**0.04**	**0.11**	**0.12**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW242	02 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	**0.06**	<0.02	**0.06**	**0.06**	**0.06**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.06**	**0.07**	**0.13**	**0.16**	**0.16**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	**0.02**	**0.04**	**0.04**	**0.04**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.08**	**0.05**	**0.13**	**0.13**	**0.13**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.06**	**0.06**	**0.12**	**0.12**	**0.12**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.25**	**0.16**	**0.41**	**0.49**	**0.49**	<0.1	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		21 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.34**	**0.06**	**0.40**	**0.42**	**0.42**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.12**	**0.05**	**0.17**	**0.19**	**0.19**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.09**	**0.02**	**0.11**	**0.11**	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Oct 2024	Field_D	<0.02	<0.05	<0.02	<0.01	**0.10**	**0.01**	**0.11**	**0.11**	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Oct 2024	Interlab_D	<0.01	<0.05	<0.05	<0.01	**0.17**	**0.04**	**0.21**	**0.24**	**0.24**	<0.05	**0.02**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.01**	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05

Table B.4
Surface Water Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																																	
				Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL				0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05	0.02	0.01	0.01
PFAS NEMP 3.0 2025 Drinking Water*							**0.56**	**0.07**	**0.07**	**0.07**																											
PFAS NEMP 3.0 2025 Recreational Water**							**10**	**2**	**2**	**2**																											
PFAS NEMP 3.0 2025 95% Eco Marine Water***							**220**	**0.13**																													
Monitoring Zone	**Location Code**	**Date**	**Sample Type**																																		
Off-Base	SW243	02 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	**0.01**	<0.02	**0.01**	**0.01**	**0.01**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		29 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	<0.02	**0.02**	**0.02**	**0.02**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		16 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		02 Mar 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	**0.01**	**0.03**	**0.03**	**0.03**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		09 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	**0.04**	**0.02**	**0.06**	**0.06**	**0.06**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		21 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		04 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	**0.02**	**0.04**	**0.04**	**0.04**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW244	03 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Nov 2020	Field_D	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		03 Nov 2020	Interlab_D	<0.01	<0.05	<0.01	<0.01	<0.02	<0.01	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		26 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		26 Mar 2021	Field_D	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		26 Mar 2021	Interlab_D	<0.01	<0.05	<0.01	<0.01	<0.02	<0.01	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Field_D	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Interlab_D	<0.01	<0.05	<0.01	<0.01	<0.02	<0.01	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		28 Feb 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		28 Feb 2022	Field_D	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		28 Feb 2022	Interlab_D	<0.01	<0.05	<0.01	<0.01	<0.02	<0.01	-	-	-	<0.05	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.02	<0.01	<0.01
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		15 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
	SW245	03 Nov 2020	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		26 Mar 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		18 Aug 2021	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		28 Feb 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		08 Mar 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2022	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		22 Aug 2023	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		07 Mar 2024	Normal	<0.02	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		15 Oct 2024	Normal	<0.02	<0.05	<0.02	<0.01	**0.02**	<0.01	**0.02**	**0.02**	**0.02**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		15 Oct 2024	Field_D	<0.02	<0.05	<0.02	<0.01	**0.02**	<0.01	**0.02**	**0.02**	**0.02**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02
		15 Oct 2024	Field_D	<0.02	<0.05	<0.02	<0.01	**0.03**	<0.01	**0.03**	**0.03**	**0.03**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02

Notes:
* = Drinking water guidelines apply only to Off-Base surface water results.
** = Recreation guidelines apply to On-Base and Off-Base surface water results.
*** = Ecological guidelines apply to Off Base surface water and On-Base dam (i.e., SW139, SW140, and SW144) results.

Table B.5
Sediment Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																															
				Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFAS	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002
Monitoring Zone	Location Code	Date	Sample Type																																
Eastern PFAS Contamination Area	SD119	16 Dec 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	0.0089	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.0029	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		29 Oct 2020	Normal	0.0211	0.0011	0.0122	0.0333	0.0469	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0027	<0.001	<0.0002	<0.0002	<0.0002	0.0006	0.0006	0.0046	<0.0002	<0.0002	0.0032	0.0008	<0.0005	<0.0002	<0.0002	0.0431
		29 Mar 2021	Normal	0.0003	<0.0002	0.0006	0.0009	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009
		18 Aug 2021	Normal	0.0153	0.0018	0.0212	0.0365	0.0514	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0018	0.001	<0.0002	<0.0002	<0.0002	0.0008	0.0009	0.0051	0.0008	<0.0002	0.0017	0.0010	<0.0005	<0.0002	<0.0002	0.0481
		01 Mar 2022	Normal	0.0003	<0.0002	0.0003	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
		22 Aug 2022	Normal	0.0023	<0.0002	0.0018	0.0041	0.0063	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0007	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.0002	0.0007	<0.0002	<0.0005	<0.0002	<0.0002	0.0056
		10 Mar 2023	Normal	0.0021	<0.0002	0.0031	0.0052	0.0055	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0055
		22 Aug 2023	Normal	0.0321	0.0020	0.0350	0.0671	0.0812	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0018	<0.001	<0.0002	<0.0002	<0.0002	0.0011	0.0005	0.0034	0.0019	<0.0002	0.0028	0.0006	<0.0005	<0.0002	<0.0002	0.0754
		04 Mar 2024	Normal	0.0003	<0.0002	0.0011	0.0014	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014
		09 Oct 2024	Normal	0.0035	0.0003	0.0021	0.0056	0.0076	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.0002	0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0071
	SD121	29 Oct 2020	Normal	0.0104	0.0016	0.0461	0.0565	0.0692	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0008	<0.001	<0.0002	0.0004	0.0005	0.0007	0.0003	0.0020	0.0042	<0.0002	0.0008	0.0002	<0.0005	<0.0002	0.0012	0.0614
		29 Mar 2021	Normal	0.0034	0.0004	0.0198	0.0232	0.0277	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	<0.0002	0.0003	0.0007	0.0004	<0.0002	0.0010	0.0005	<0.0002	0.0002	0.0003	<0.0005	<0.0002	0.0005	0.0251
		16 Aug 2021	Normal	0.0097	0.0006	0.0097	0.0194	0.0249	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0007	<0.001	<0.0002	<0.0002	<0.0002	0.0004	0.0002	0.0018	0.0003	<0.0002	0.0012	0.0003	<0.0005	<0.0002	<0.0002	0.0230
		22 Apr 2022	Normal	0.0052	<0.0002	0.0043	0.0095	0.0099	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0095
		22 Aug 2022	Normal	0.0082	0.0020	0.0541	0.0623	0.0714	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0008	<0.001	<0.0002	<0.0002	<0.0002	0.0010	0.0003	0.0021	0.0015	<0.0002	0.0008	0.0003	<0.0005	<0.0002	0.0003	0.0678
		06 Mar 2023	Normal	0.0222	0.0013	0.0963	0.118	0.131	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0025	<0.001	<0.0002	0.0002	<0.0002	0.0014	0.0003	0.0027	0.0024	<0.0002	0.0018	<0.0002	<0.0005	<0.0002	<0.0002	0.125
		22 Aug 2023	Normal	0.0016	<0.0002	0.0055	0.0071	0.0073	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0073
		04 Mar 2024	Normal	0.0006	<0.0002	0.0032	0.0038	0.0038	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0038
		09 Oct 2024	Normal	0.502	0.0435	0.418	0.920	1.31	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	0.0450	0.010	<0.0010	<0.0010	<0.0010	0.0201	0.0108	0.120	0.0680	<0.0010	0.0578	0.0168	<0.0025	<0.0010	0.0015	1.17
Former Fire Station	SD109	16 Dec 2018	Normal	0.0086	0.0011	0.12	-	-	<0.002	<0.001	<0.005	0.0023	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.0065	<0.001	<0.001	0.002	<0.001	<0.001	0.0019	<0.001	0.0026	<0.001	<0.002	<0.002	0.0049	<0.002	-
		29 Oct 2020	Normal	0.0067	0.0007	0.0307	0.0374	0.0435	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0010	<0.001	<0.0004	<0.0002	<0.0002	0.0007	0.0003	0.0020	<0.0002	<0.0002	0.0009	0.0005	<0.0002	<0.0002	<0.0002	0.0419
		29 Mar 2021	Normal	0.0090	0.0010	0.0790	0.0880	0.101	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0008	<0.001	0.0027	<0.0002	0.0002	0.0010	0.0005	0.0026	<0.0002	0.0021	0.0009	0.0005	<0.0005	0.0004	0.0004	0.0934
		16 Aug 2021	Normal	0.0054	0.0008	0.122	0.127	0.139	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	0.0004	<0.001	0.0018	<0.0002	0.0004	0.0009	0.0005	0.0014	0.0003	0.0031	0.0005	0.0006	<0.0006	0.0007	0.0005	0.131
		01 Mar 2022	Normal	0.0635	0.0076	0.253	0.316	0.371	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	0.0055	<0.002	0.0017	<0.0002	<0.0002	0.0051	0.0021	0.0153	0.0005	0.0072	0.0063	0.0029	<0.0006	0.0005	<0.0004	0.350
		22 Aug 2022	Normal	0.0297	0.0050	0.566	0.596	0.633	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0031	<0.001	0.0035	<0.0002	0.0003	0.0047	0.0011	0.0071	0.0007	0.0048	0.0030	0.0019	<0.0005	0.0007	0.0004	0.615
		06 Mar 2023	Normal	0.0330	0.0032	0.377	0.410	0.434	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	0.0024	<0.005	<0.0010	<0.0010	<0.0010	0.0046	<0.0010	0.0059	<0.0010	0.0056	0.0020	<0.0010	<0.0025	<0.0010	<0.0010	0.422
		22 Aug 2023	Normal	0.124	0.0109	0.458	0.582	0.673	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0006	<0.0012	<0.0012	<0.0005	0.0120	<0.002	0.0015	<0.0005	<0.0005	0.0108	0.0042	0.0280	<0.0009	0.0039	0.0134	0.0060	<0.0012	0.0007	<0.0005	0.643
		04 Mar 2024	Normal	0.0095	0.0008	0.0500	0.0595	0.0674	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0008	<0.001	0.0006	<0.0002	<0.0002	0.0009	0.0003	0.0019	<0.0002	0.0012	0.0008	0.0003	<0.0005	0.0003	<0.0002	0.0636
		09 Oct 2024	Normal	0.149	0.0145	2.05	2.20	2.31	<0.0098	<0.0098	<0.0098	<0.0098	<0.0246	<0.0246	<0.0098	<0.0246	<0.0246	<0.0098	0.0106	<0.049	<0.0098	<0.0098	<0.0098	0.0251	<0.0098	0.0225	<0.0098	0.0212	<0.0098	0.0145	<0.0246	<0.0098	<0.0098	2.26
	SD110	14 Dec 2018	Normal	0.014	0.0015	0.17	-	-	<0.002	<0.001	<0.005	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.0046	<0.001	<0.001	<0.002	0.0014	<0.001	0.0027	<0.001	<0.001	0.0012	<0.002	<0.002	<0.002	<0.002	-
		29 Oct 2020	Normal	0.0319	0.0012	0.0098	0.0417	0.0756	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	0.0081	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	0.0018	0.0131	<0.0005	<0.0005	0.0064	0.0033	<0.0012	<0.0005	<0.0005	0.0692
		29 Mar 2021	Normal	0.0016	0.0002	0.0074	0.0090	0.0100	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0098
		16 Aug 2021	Normal	0.0091	0.0008	0.0542	0.0633	0.0715	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0013	<0.001	0.0005	<0.0002	<0.0002	0.0010	0.0003	0.0021	<0.0002	0.0003	0.0012	0.0005	<0.0005	<0.0002	0.0002	0.0683
		01 Mar 2022	Normal	0.0168	0.0017	0.161	0.178	0.191	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0012	<0.001	0.0013	<0.0002	<0.0002	0.0024	0.0003	0.0027	0.0003	0.0012	0.0015	0.0005	<0.0005	<0.0002	0.0003	0.184
		22 Aug 2022	Normal	0.0068	0.0008	0.0780	0.0848	0.0933	<0.0005	<0.0005	<0.0005	<0.0005	<0.0009	<0.0009	<0.0004	<0.0009	<0.0009	<0.0004	0.0011	<0.002	0.0010	<0.0004	0.0004	0.0008	<0.0004	0.0012	0.0004	0.0010	0.0006	<0.0004	<0.0009	0.0006	0.0006	0.0879
		06 Mar 2023	Normal	0.0018	0.0002	0.0130	0.0148	0.0157	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0154
		22 Aug 2023	Normal	0.0334	0.0034	0.669	0.702	0.726	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	0.0020	<0.002	0.0009	<0.0005	<0.0005	0.0057	0.0010	0.0047	<0.0008	0.0027	0.0024	0.0009	<0.0012	<0.0007	<0.0007	0.714
		04 Mar 2024	Normal	0.0015	<0.0002	0.0245	0.0260	0.0283	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0012	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	0.0002	<0.0005	0.0003	0.0002	0.0266
		09 Oct 2024	Normal	0.0425	0.0039	0.667	0.710	0.776	<0.0010	<0.0010	<0.0010	<0.0010	<0.0024	<0.0024	<0.0010	<0.0024	<0.0024	<0.0010	0.0050	<0.005	<0.0347	<0.0010	<0.0037	<0.0080	0.0016	0.0072	<0.0015	0.0405	0.0034	0.0022	<0.0024	0.0026	<0.0023	0.729
Lavarack Golf Course & Sporting Field	SD129	29 Oct 2020	Normal	<0.0002	<0.0002	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
		26 Mar 2021	Normal	<0.0002	<0.0002	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
		18 Aug 2021	Normal	<0.0002	<0.0002	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007
		02 Mar 2022	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
		22 Aug 2022	Normal	0.0003	<0.0002	0.0009	0.0012	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014
		22 Aug 2022	Field_D	0.0002	<0.0002	0.0010	0.0012	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
		22 Aug 2022	Interlab_D	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		06 Mar 2023	Normal	0.0002	<0.0002	0.0012	0.0014	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014
		06 Mar 2023	Field_D	<0.0002	<0.0002	0.0022	0.0022	0.0022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0022
		06 Mar 2023	Interlab_D	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
		25 Aug 2023	Normal	0.0063	0.0004	0.0050	0.0113	0.0135	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	0.0004	<0.0002	<0.0002	0.0004	<0.0002	<0.0005	<0.0002	<0.0002	0.0126
		08 Mar 2024	Normal	<0.0002	<0.0002	0.0006	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
		09 Oct 2024	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0020	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
	SD130	29 Oct 2020	Normal	<0.0005	<0.0005	0.0021	0.0021	0.0021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0021
		26 Mar 2021	Normal	0.0012	<0.0002	0.0083	0.0095	0.0095	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0004	<0.0002	0.0095
		18 Aug 2021	Normal	<0.0002	<0.0002	0.0011	0.0011	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0011
		02 Mar 2022	Normal	0.0002	<0.0002	0.0010	0.0012	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
		22 Aug 2022	Normal	0.0003	<0.0002	0.0015	0.0018	0.0018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018
		08 Mar 2023	Normal	<0.0002	<0.0002	0.0034	0.0034	0.0034	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0034
		25 Aug 2023	Normal	0.0008	<0.0002	0.0062	0.0070	0.0070	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0012	<0.0005	<0.0002	<0.002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0009	<0.0012	<0.0005	<0.0005	0.0070
		04 Mar 2024	Normal	0.0006	<0.0002	0.0047	0.0053	0.0056	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0053
		09 Oct 2024	Normal	<0.0002	<0.0002	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007

Table B.5
Sediment Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																														
				Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFAS	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002
Monitoring Zone	Location Code	Date	Sample Type																															
Top Middle and Lower Dams	SD139	02 Oct 2018	Normal	0.0022	<0.001	0.02	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		29 Oct 2020	Normal	0.0024	<0.0010	0.0227	0.0251	0.0251	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	0.0251
		29 Oct 2020	Field_D	0.0023	<0.0005	0.0181	0.0204	0.0204	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0204
		29 Oct 2020	Interlab_D	0.0071	<0.001	0.041	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		29 Mar 2021	Normal	0.0069	0.0005	0.0825	0.0894	0.0940	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	0.0004	<0.0002	0.0002	0.0013	<0.0002	0.0008	<0.0002	<0.0002	0.0005	<0.0002	<0.0005	<0.0002	0.0004	0.0912
		29 Mar 2021	Field_D	0.0083	0.0006	0.0746	0.0829	0.0882	<0.0005	<0.0005	<0.0005	<0.0005	<0.0007	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0004	<0.001	0.0004	<0.0002	<0.0006	0.0013	<0.0002	0.0014	0.0002	<0.0002	0.0006	0.0004	<0.0005	<0.0005	<0.0003	0.0857
		29 Mar 2021	Interlab_D	0.0084	<0.001	0.084	-	-	<0.002	<0.001	0.0013	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	0.0011	<0.001	0.0011	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		16 Aug 2021	Normal	0.0044	<0.0010	0.0468	0.0512	0.0512	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	0.0512
		01 Mar 2022	Normal	0.0057	0.0004	0.0705	0.0762	0.0794	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	0.0004	<0.0002	<0.0002	0.0015	<0.0002	0.0004	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0772
		01 Mar 2022	Field_D	0.0037	0.0002	0.0365	0.0402	0.0414	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0003	<0.0002	<0.0002	0.0008	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0406
		01 Mar 2022	Interlab_D	0.01	<0.001	0.087	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	0.0013	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		22 Aug 2022	Normal	0.0049	<0.0004	0.0635	0.0684	0.0708	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0010	<0.0004	<0.0010	<0.0010	<0.0004	0.0005	<0.002	0.0004	<0.0004	<0.0004	0.0006	<0.0004	0.0009	<0.0004	<0.0004	<0.0004	<0.0004	<0.0010	<0.0004	<0.0004	0.0698
		06 Mar 2023	Normal	0.0330	0.0017	0.0682	0.101	0.120	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0039	<0.001	0.0003	<0.0002	<0.0002	0.0024	0.0003	0.0047	<0.0002	<0.0002	0.0042	0.0008	<0.0005	<0.0002	<0.0002	0.113
		22 Aug 2023	Normal	0.0022	0.0002	0.0134	0.0156	0.0164	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0164
		04 Mar 2024	Normal	0.0182	0.0017	0.148	0.166	0.178	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0007	<0.001	0.0004	0.0002	<0.0002	0.0055	0.0003	0.0011	0.0003	<0.0002	0.0009	0.0002	<0.0005	<0.0002	<0.0002	0.170
		09 Oct 2024	Normal	0.0096	0.0005	0.0688	0.0784	0.0833	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0014	<0.001	<0.0006	<0.0002	<0.0010	<0.0010	<0.0002	0.0014	<0.0002	<0.0010	0.0013	0.0003	<0.0005	<0.0010	<0.0002	0.0820
		09 Oct 2024	Field_D	0.0065	0.0004	0.0625	0.0690	0.0740	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005	<0.0014	<0.0005	<0.0005	<0.0002	0.0008	<0.001	0.0003	<0.0002	<0.0002	0.0011	<0.0002	0.0008	<0.0005	0.0007	0.0006	<0.0002	<0.0005	0.0003	<0.0002	0.0710
		09 Oct 2024	Interlab_D	<0.005	<0.005	0.017	0.017	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.017
	SD140	03 Oct 2018	Normal	0.0016	<0.001	0.033	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		03 Oct 2018	Field_D	0.0015	<0.001	0.04	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		03 Oct 2018	Interlab_D	0.00066	<0.0005	0.015	0.016	0.016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.016
		05 Aug 2019	Normal	0.0015	<0.001	0.017	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		05 Aug 2019	Field_D	0.0018	<0.001	0.03	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		05 Aug 2019	Interlab_D	0.0009	<0.0005	0.015	0.015	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.015
		29 Oct 2020	Normal	0.0024	<0.0002	0.0216	0.0240	0.0250	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0003	<0.0002	<0.0002	0.0002	<0.0002	0.0003	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0243
		29 Mar 2021	Normal	0.0039	0.0004	0.0508	0.0547	0.0582	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0011	<0.0002	<0.0002	0.0006	<0.0002	0.0006	<0.0002	<0.0002	0.0002	0.0003	<0.0005	<0.0003	0.0003	0.0560
		16 Aug 2021	Normal	0.0027	0.0002	0.0222	0.0249	0.0267	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	0.0004	<0.0002	<0.0002	0.0004	<0.0002	0.0004	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0257
		16 Aug 2021	Field_D	0.0036	0.0002	0.0330	0.0366	0.0387	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	0.0004	<0.0002	<0.0002	0.0006	<0.0002	0.0004	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0374
		16 Aug 2021	Interlab_D	0.0019	<0.001	0.015	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		01 Mar 2022	Normal	0.0012	<0.0002	0.0167	0.0179	0.0184	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0179
		22 Aug 2022	Normal	0.0010	<0.0002	0.0170	0.0180	0.0180	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0180
		06 Mar 2023	Normal	0.0026	0.0003	0.0364	0.0390	0.0412	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0002	<0.0006	<0.0005	0.0002	0.0004	<0.001	0.0006	<0.0002	<0.0002	0.0003	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0008	0.0401
		22 Aug 2023	Normal	0.0041	0.0002	0.0316	0.0357	0.0364	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0003	<0.001	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	0.0005	<0.0002	<0.0002	<0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0364
		04 Mar 2024	Normal	0.0018	0.0002	0.0090	0.0108	0.0116	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0114
		09 Oct 2024	Normal	0.0030	0.0002	0.0245	0.0275	0.0298	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	0.0007	<0.0002	<0.0002	0.0004	<0.0002	0.0004	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0284
		09 Oct 2024	Field_D	0.0028	0.0002	0.0240	0.0268	0.0286	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0003	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0276
		09 Oct 2024	Interlab_D	<0.005	<0.005	0.013	0.013	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.013
	SD144	13 May 2021	Normal	0.0054	<0.0010	0.356	0.361	0.365	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0010	<0.005	0.0013	<0.0010	<0.0010	0.0013	<0.0010	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	0.362
		16 Aug 2021	Normal	0.0002	<0.0002	0.0058	0.0060	0.0060	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0060
		01 Mar 2022	Normal	0.0024	<0.0002	0.0325	0.0349	0.0349	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0009	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0002	0.0349
		22 Aug 2022	Normal	0.0004	<0.0002	0.0201	0.0205	0.0205	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0205
		10 Mar 2023	Normal	0.0090	0.0012	0.264	0.273	0.281	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0006	<0.001	0.0009	<0.0002	<0.0002	0.0030	<0.0002	0.0010	<0.0002	<0.0002	0.0008	0.0002	<0.0005	<0.0002	<0.0002	0.276
		22 Aug 2023	Normal	0.0012	<0.0002	0.0114	0.0126	0.0126	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0126
		04 Mar 2024	Normal	0.0023	0.0003	0.0393	0.0416	0.0436	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	0.0003	<0.0002	<0.0002	0.0003	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	0.0002	<0.0005	<0.0002	<0.0002	0.0430
		09 Oct 2024	Normal	0.0004	<0.0002	0.0052	0.0056	0.0056	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0056

Table B.5
Sediment Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																															
				Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFAS	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002
Monitoring Zone	Location Code	Date	Sample Type																																
Remaining On-Base	SD113	12 Dec 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		28 Oct 2020	Normal	<0.0002	<0.0002	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
		29 Mar 2021	Normal	<0.0002	<0.0002	0.0012	0.0012	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
		18 Aug 2021	Normal	<0.0002	<0.0002	0.0011	0.0011	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0011
		01 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		22 Aug 2022	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
		10 Mar 2023	Normal	<0.0002	<0.0002	0.0008	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008
		22 Aug 2023	Normal	<0.0002	<0.0002	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
		22 Aug 2023	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		22 Aug 2023	Interlab_D	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
		04 Mar 2024	Normal	<0.0002	<0.0002	0.0008	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008
		04 Mar 2024	Field_D	<0.0002	<0.0002	0.0010	0.0010	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
		09 Oct 2024	Normal	<0.0002	<0.0002	0.0008	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008
	SD120	12 Dec 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		28 Oct 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		29 Mar 2021	Normal	<0.0002	<0.0002	0.0014	0.0014	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014
		18 Aug 2021	Normal	0.0003	<0.0002	0.0034	0.0037	0.0037	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0037
		18 Aug 2021	Field_D	0.0003	<0.0002	0.0035	0.0038	0.0038	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0038
		18 Aug 2021	Interlab_D	<0.001	<0.001	0.006	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		01 Mar 2022	Normal	<0.0002	<0.0002	0.0006	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
		03 Sep 2022	Normal	<0.0002	<0.0002	0.0019	0.0019	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0019
		06 Mar 2023	Normal	0.0005	<0.0002	0.0037	0.0042	0.0042	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0042
		22 Aug 2023	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
		04 Mar 2024	Normal	<0.0002	<0.0002	0.0009	0.0009	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009
		09 Oct 2024	Normal	<0.0002	<0.0002	0.0018	0.0018	0.0018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018
Base Boundary	SD126	29 Oct 2020	Normal	<0.0002	<0.0002	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
		26 Mar 2021	Normal	<0.0002	<0.0002	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
		18 Aug 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		02 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		23 Aug 2022	Normal	0.0002	<0.0002	0.0034	0.0036	0.0041	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0002	0.0003	0.0036
		23 Aug 2022	Field_D	<0.0002	<0.0002	0.0015	0.0015	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0002	0.0002	0.0015
		23 Aug 2022	Interlab_D	<0.001	<0.001	0.0064	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		08 Mar 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		25 Aug 2023	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
		04 Mar 2024	Normal	<0.0002	<0.0002	0.0006	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
		04 Mar 2024	Field_D	<0.0002	<0.0002	0.0006	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
		09 Oct 2024	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	SD128	29 Oct 2020	Normal	<0.0002	<0.0002	0.0010	0.0010	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
		26 Mar 2021	Normal	0.0004	<0.0002	0.0040	0.0044	0.0054	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0010	<0.0002	<0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0003	<0.0002	0.0044
		18 Aug 2021	Normal	0.0007	<0.0002	0.0034	0.0041	0.0045	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0004	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0045
		02 Mar 2022	Normal	0.0003	<0.0002	0.0014	0.0017	0.0017	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0017
		23 Aug 2022	Normal	0.0003	<0.0002	0.0026	0.0029	0.0029	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0029
		06 Mar 2023	Normal	0.0006	0.0002	0.0125	0.0131	0.0138	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0135
		25 Aug 2023	Normal	0.0003	<0.0002	0.0034	0.0037	0.0039	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0037
		25 Aug 2023	Field_D	0.0003	<0.0002	0.0046	0.0049	0.0052	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0049
		25 Aug 2023	Interlab_D	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
		04 Mar 2024	Normal	0.0004	<0.0002	0.0141	0.0145	0.0145	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0145
		09 Oct 2024	Normal	0.0005	<0.0002	0.0019	0.0024	0.0024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0024
	SD132	16 Dec 2018	Normal	<0.001	<0.001	0.02	-	-	<0.002	<0.001	<0.005	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.0054	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		29 Oct 2020	Normal	0.0008	<0.0002	0.0031	0.0039	0.0039	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0039
		01 Apr 2021	Normal	0.0004	<0.0002	0.0033	0.0037	0.0037	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0037
		22 Apr 2022	Normal	0.0002	<0.0002	0.0048	0.0050	0.0050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0050
		22 Aug 2022	Normal	0.0025	<0.0002	0.0108	0.0133	0.0147	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0004	<0.001	0.0004	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0141
		06 Mar 2023	Normal	0.0008	<0.0002	0.0094	0.0102	0.0105	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0105
		25 Aug 2023	Normal	0.0008	<0.0002	0.0036	0.0044	0.0044	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0044
		25 Aug 2023	Field_D	0.0009	<0.0002	0.0059	0.0068	0.0068	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0068
		25 Aug 2023	Interlab_D	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
		04 Mar 2024	Normal	<0.0002	<0.0002	0.0019	0.0019	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0019
		09 Oct 2024	Normal	0.0085	0.0004	0.0380	0.0465	0.0521	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0007	<0.001	0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0008	<0.0002	<0.0002	0.0007	<0.0002	<0.0005	0.0013	<0.0002	0.0484

				Per-and poly-fluoroalkyl substances																																	
				Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFAS	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002
Monitoring Zone	Location Code	Date	Sample Type																																		
Base Boundary	SD133	29 Oct 2020	Normal	<0.0002	<0.0002	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007
		29 Mar 2021	Normal	<0.0002	<0.0002	0.0010	0.0010	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
		16 Aug 2021	Normal	<0.0002	<0.0002	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007
		01 Mar 2022	Normal	<0.0002	<0.0002	0.0006	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
		23 Aug 2022	Normal	<0.0002	<0.0002	0.0020	0.0020	0.0020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0020
		06 Mar 2023	Normal	0.0011	<0.0002	0.0112	0.0123	0.0129	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	0.0006	0.0123
		25 Aug 2023	Normal	<0.0002	<0.0002	0.0024	0.0024	0.0024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0024
		04 Mar 2024	Normal	<0.0002	<0.0002	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
		09 Oct 2024	Normal	<0.0002	<0.0002	0.0006	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
	SD134	29 Oct 2020	Normal	<0.0002	<0.0002	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
		01 Apr 2021	Normal	<0.0010	<0.0010	0.0018	0.0018	0.0018	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	0.0018
		18 Aug 2021	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
		01 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		22 Aug 2022	Normal	<0.0002	<0.0002	0.0006	0.0006	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
		08 Mar 2023	Normal	<0.0002	<0.0002	0.0012	0.0012	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
		22 Aug 2023	Normal	<0.0002	<0.0002	<0.0003	<0.0002	0.0003	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005	<0.0025	<0.0002	<0.0005	<0.0025	<0.0002	<0.0002	<0.001	<0.0002	<0.0010	<0.0010	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0010	<0.0002	<0.0002	<0.0025	<0.0010	<0.0010	0.0003
		04 Mar 2024	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		09 Oct 2024	Normal	<0.0002	<0.0002	<0.0010	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	SD135	12 Dec 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		28 Oct 2020	Normal	<0.0002	<0.0002	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
		29 Mar 2021	Normal	0.0006	<0.0002	0.0025	0.0031	0.0031	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0031
		18 Aug 2021	Normal	<0.0002	<0.0002	0.0009	0.0009	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009
		01 Mar 2022	Normal	<0.0002	<0.0002	0.0012	0.0012	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
		22 Aug 2022	Normal	<0.0002	<0.0002	0.0014	0.0014	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014
		06 Mar 2023	Normal	0.0012	<0.0002	0.0014	0.0026	0.0029	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0029
		22 Aug 2023	Normal	<0.0002	<0.0002	0.0009	0.0009	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009
		04 Mar 2024	Normal	<0.0002	<0.0002	0.0010	0.0010	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
		09 Oct 2024	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
	SD136	17 Dec 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	0.0092	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.04	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		28 Oct 2020	Normal	0.0003	<0.0002	0.0015	0.0018	0.0018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018
		26 Mar 2021	Normal	0.0008	<0.0002	0.0051	0.0059	0.0064	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0064
		16 Aug 2021	Normal	0.0015	0.0002	0.0107	0.0122	0.0129	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0129
		02 Mar 2022	Normal	<0.0002	<0.0002	0.0008	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008
		23 Aug 2022	Normal	0.0008	<0.0002	0.0075	0.0083	0.0083	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0083
		06 Mar 2023	Normal	0.0003	<0.0002	0.0003	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
		06 Mar 2023	Field_D	0.0003	<0.0002	0.0003	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
		06 Mar 2023	Interlab_D	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
		25 Aug 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		04 Mar 2024	Normal	<0.0002	<0.0002	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
		09 Oct 2024	Normal	0.0017	<0.0002	0.0005	0.0022	0.0022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0022
Off-Base	SD203	28 Nov 2017	Normal	0.0012	<0.001	0.012	-	-	-	-	<0.001	<0.001	<0.002	<0.005	-	<0.002	<0.005	-	<0.001	<0.002	-	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002	<0.002	<0.002	<0.002	-
		26 Sep 2018	Normal	<0.001	<0.001	0.0024	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		02 Nov 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		29 Mar 2021	Normal	0.0005	<0.0002	0.0026	0.0031	0.0031	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0031
		29 Mar 2021	Field_D	0.0005	<0.0002	0.0034	0.0039	0.0042	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0039
		29 Mar 2021	Interlab_D	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		19 Aug 2021	Normal	<0.0002	<0.0002	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
		02 Mar 2022	Normal	<0.0002	<0.0002	0.0002	0.0002	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0002
		02 Mar 2022	Field_D	<0.0002	<0.0002	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
		02 Mar 2022	Interlab_D	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		22 Aug 2022	Normal	<0.0002	<0.0002	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
		08 Mar 2023	Normal	0.0012	<0.0002	0.0084	0.0096	0.0098	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0096
		21 Aug 2023	Normal	<0.0002	<0.0002	0.0015	0.0015	0.0015	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0015
		04 Mar 2024	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
		09 Oct 2024	Normal	0.0016	<0.0002	0.0116	0.0132	0.0132	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0132

Table B.5
Sediment Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																															
				Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFAS	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002
Monitoring Zone	Location Code	Date	Sample Type																																
Off-Base	SD205	28 Nov 2017	Normal	<0.001	<0.001	<0.002	-	-	-	-	<0.001	<0.001	<0.002	<0.005	-	<0.002	<0.005	-	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002	<0.002	<0.002	<0.002	-
		27 Sep 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	-
		02 Nov 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		29 Mar 2021	Normal	<0.0002	<0.0002	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007
		19 Aug 2021	Normal	0.0002	0.0002	0.0017	0.0019	0.0021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0021
		02 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		22 Aug 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		09 Mar 2023	Normal	<0.0002	<0.0002	0.0008	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008
		21 Aug 2023	Normal	<0.0002	<0.0002	0.0026	0.0026	0.0026	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0026
		09 Oct 2024	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0002	<0.0012	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
	SD211	30 Nov 2017	Normal	<0.001	<0.001	<0.002	-	-	-	-	<0.001	<0.001	<0.002	<0.005	-	<0.002	<0.005	-	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002	<0.002	<0.002	<0.002	-
		02 Nov 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		01 Apr 2021	Normal	<0.0005	<0.0005	0.0015	0.0015	0.0015	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0015
		19 Aug 2021	Normal	<0.0002	<0.0002	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
		03 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		25 Aug 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		09 Mar 2023	Normal	<0.0002	<0.0002	0.0010	0.0010	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
		22 Aug 2023	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
		07 Mar 2024	Normal	<0.0002	<0.0002	0.0008	0.0008	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008
		09 Oct 2024	Normal	<0.0002	<0.0002	0.0036	0.0036	0.0063	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0021	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.0002	0.0036
	SD212	02 Nov 2020	Normal	<0.0002	<0.0002	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
		01 Apr 2021	Normal	<0.0002	<0.0002	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
		19 Aug 2021	Normal	<0.0002	<0.0002	0.0002	0.0002	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0002
		03 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		25 Aug 2022	Normal	<0.0002	<0.0002	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
		09 Mar 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		22 Aug 2023	Normal	<0.0002	<0.0002	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
		07 Mar 2024	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
		09 Oct 2024	Normal	<0.0002	<0.0002	0.0010	0.0010	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
	SD217	17 Dec 2018	Normal	<0.001	<0.001	0.003	-	-	<0.002	<0.001	<0.005	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.011	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		17 Dec 2018	Field_D	<0.001	<0.001	0.0023	-	-	<0.002	<0.001	0.0028	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.0086	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		02 Nov 2020	Normal	<0.0005	<0.0005	0.0010	0.0010	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0010
		02 Nov 2020	Field_D	<0.0005	<0.0005	<0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
		02 Nov 2020	Interlab_D	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		29 Mar 2021	Normal	<0.0002	<0.0002	0.0011	0.0011	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0011
		19 Aug 2021	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
		02 Mar 2022	Normal	<0.0002	<0.0002	0.0009	0.0009	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009
		22 Aug 2022	Normal	0.0002	<0.0002	0.0018	0.0020	0.0022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0022
		22 Aug 2022	Field_D	0.0002	<0.0002	0.0018	0.0020	0.0020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0020
		22 Aug 2022	Interlab_D	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		06 Mar 2023	Normal	<0.0002	<0.0002	0.0012	0.0012	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
		06 Mar 2023	Field_D	<0.0002	<0.0002	0.0015	0.0015	0.0015	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0015
		06 Mar 2023	Interlab_D	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
		21 Aug 2023	Normal	0.0011	0.0007	0.0024	0.0035	0.0052	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0050
		04 Mar 2024	Normal	0.0005	0.0010	0.0027	0.0032	0.0042	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0042
		04 Mar 2024	Field_D	0.0006	0.0007	0.0030	0.0036	0.0043	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0043
		09 Oct 2024	Normal	<0.0002	<0.0002	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0013	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007
	SD220	19 Sep 2018	Normal	0.0036	<0.001	0.024	-	-	<0.002	<0.001	0.0011	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.0039	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		02 Nov 2020	Normal	0.0025	<0.0002	0.0130	0.0155	0.0158	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0158
		01 Apr 2021	Normal	0.0068	<0.0005	0.0963	0.103	0.106	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0013	<0.0005	<0.0013	<0.0013	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	0.0024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	0.103
		16 Aug 2021	Normal	0.0074	0.0003	0.0336	0.0410	0.0465	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0011	<0.001	<0.0002	<0.0002	0.0004	0.0008	0.0002	0.0009	0.0006	<0.0002	0.0007	<0.0002	<0.0005	0.0002	0.0003	0.0435
		02 Mar 2022	Normal	0.0008	<0.0002	0.0042	0.0050	0.0050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0050
		22 Aug 2022	Normal	0.0062	<0.0002	0.0228	0.0290	0.0317	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	0.0008	0.0006	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0303
		09 Mar 2023	Normal	0.0056	0.0003	0.0166	0.0222	0.0235	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0010	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0225
		21 Aug 2023	Normal	0.0059	<0.0002	0.0192	0.0251	0.0276	<0.0010	<0.0010	<0.0010	<0.0010	<0.0024	<0.0024	<0.0010	<0.0024	<0.0024	<0.0010	0.0004	<0.001	<0.0002	<0.0002	<0.0002	<0.0010	0.0003	<0.0002	0.0011	0.0003	<0.0002	0.0004	<0.0002	<0.0005	<0.0010	<0.0010	0.0266
		04 Mar 2024	Normal	0.0061	<0.0002	0.0050	0.0111	0.0122	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	<0.0002	<0.0002	0.0002	<0.0002	0.0002	0.0004	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0118
		08 Oct 2024	Normal	0.0025	<0.0002	0.0098	0.0123	0.0123	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0123

				Per-and poly-fluoroalkyl substances																																	
				Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFAS	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	
Monitoring Zone	Location Code	Date	Sample Type																																		
Off-Base	SD227	24 Jan 2018	Normal	<0.001	<0.001	<0.002	-	-	-	-	<0.001	<0.001	<0.002	<0.005	-	<0.002	<0.005	-	<0.001	<0.002	<0.001	-	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002	<0.002	<0.002	<0.002	-
		02 Aug 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		02 Aug 2018	Field_D	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		02 Aug 2018	Interlab_D	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		07 Aug 2019	Normal	<0.001	0.01	0.014	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	0.0022	<0.001	<0.002	<0.001	0.018	0.0046	<0.001	0.0015	0.002	0.0017	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		03 Nov 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
		26 Mar 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
		18 Aug 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
		28 Feb 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
		23 Aug 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
		08 Mar 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
		22 Aug 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
		07 Mar 2024	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
		15 Oct 2024	Normal	<0.0002	<0.0002	0.0009	0.0009	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0012
	SD232	19 Sep 2018	Field_D	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	0.0011	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		19 Sep 2018	Interlab_D	<0.0005	<0.0005	0.00055	0.0010	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0010
		19 Sep 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	0.002	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		02 Nov 2020	Normal	0.0002	<0.0002	0.0023	0.0025	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0025
		29 Mar 2021	Normal	<0.0002	<0.0002	0.0018	0.0018	0.0026	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0005	<0.0002	<0.0002	0.0024
		16 Aug 2021	Normal	<0.0002	<0.0002	0.0018	0.0018	0.0018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0018
		02 Mar 2022	Normal	0.0007	<0.0002	0.0007	0.0014	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0014
		22 Aug 2022	Normal	0.0002	<0.0002	0.0010	0.0012	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0012
		09 Mar 2023	Normal	0.0003	<0.0002	0.0032	0.0035	0.0035	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0035
		21 Aug 2023	Normal	0.0007	0.0002	0.0025	0.0032	0.0034	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0034
		21 Aug 2023	Field_D	<0.0002	<0.0002	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0007
		21 Aug 2023	Interlab_D	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
		04 Mar 2024	Normal	<0.0002	<0.0002	0.0008	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005	<0.0002	<0.0025	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0008
		08 Oct 2024	Normal	<0.0002	<0.0002	0.0012	0.0012	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005	<0.0002	<0.0025	<0.0005	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0012
	SD233	19 Sep 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		02 Nov 2020	Normal	0.0002	<0.0002	0.0020	0.0022	0.0022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0022
		29 Mar 2021	Normal	0.0023	0.0002	0.0267	0.0290	0.0300	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0297
		16 Aug 2021	Normal	0.0011	<0.0002	0.0104	0.0115	0.0115	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0115
		02 Mar 2022	Normal	0.0010	<0.0002	0.0071	0.0081	0.0081	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0081
		22 Aug 2022	Normal	0.0020	<0.0002	0.0184	0.0204	0.0210	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0207
		22 Aug 2022	Field_D	0.0015	<0.0002	0.0099	0.0114	0.0118	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0114
		22 Aug 2022	Interlab_D	0.0012	<0.001	0.0071	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		15 Mar 2023	Normal	0.0022	<0.0002	0.0084	0.0106	0.0111	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0109
		15 Mar 2023	Field_D	0.0028	<0.0002	0.0074	0.0102	0.0112	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0108
		15 Mar 2023	Interlab_D	<0.005	<0.005	0.0058	0.0058	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
		21 Aug 2023	Normal	0.0028	0.0003	0.0206	0.0234	0.0253	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	0.0003	<0.0002	<0.0002	0.0004	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0243
		04 Mar 2024	Normal	0.0040	<0.0002	0.0163	0.0203	0.0209	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0205
		08 Oct 2024	Normal	0.0020	<0.0002	0.0142	0.0162	0.0166	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0166
	SD242	24 Aug 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
		02 Nov 2020	Normal	<0.0002	<0.0002	0.0010	0.0010	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0010
		29 Mar 2021	Normal	<0.0002	<0.0002	0.0034	0.0034	0.0042	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	0.0002	<0.0002	0.0034
		16 Aug 2021	Normal	<0.0002	<0.0002	0.0023	0.0023	0.0023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0023
		22 Apr 2022	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0004
		22 Aug 2022	Normal	0.0002	<0.0002	0.0051	0.0053	0.0057	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0053
		09 Mar 2023	Normal	<0.0002	<0.0002	0.0010	0.0010	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0010
		21 Aug 2023	Normal	0.0006	<0.0002	0.0054	0.0060	0.0060	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0060
		04 Mar 2024	Normal	<0.0002	<0.0002	0.0047	0.0047	0.0047	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0047
		08 Oct 2024	Normal	0.0006	0.0003	0.0035	0.0041	0.0044	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0044
		08 Oct 2024	Field_D	<0.0002	0.0002	0.0027	0.0027	0.0029	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0029
		08 Oct 2024	Interlab_D	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01

Table B.5
Sediment Analytical Results
October 2020 - October 2024
0229 Lavarack Barracks

				Per-and poly-fluoroalkyl substances																																	
				Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFAS	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002		
Monitoring Zone	Location Code	Date	Sample Type																																		
Off-Base	SD243	24 Aug 2018	Field_D	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.01	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-	
		24 Aug 2018	Interlab_D	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
		24 Aug 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-	
		02 Nov 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		29 Mar 2021	Normal	<0.0002	<0.0002	0.0009	0.0009	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009		
		16 Aug 2021	Normal	<0.0002	<0.0002	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003		
		02 Mar 2022	Normal	<0.0002	<0.0002	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003		
		22 Aug 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		09 Mar 2023	Normal	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004		
		21 Aug 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		04 Mar 2024	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		08 Oct 2024	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0002	<0.0012	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
	SD244	02 Aug 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-	
		03 Nov 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		03 Nov 2020	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		03 Nov 2020	Interlab_D	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-	
		26 Mar 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		26 Mar 2021	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		26 Mar 2021	Interlab_D	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-	
		18 Aug 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		18 Aug 2021	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		18 Aug 2021	Interlab_D	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-	
		28 Feb 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		28 Feb 2022	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		28 Feb 2022	Interlab_D	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-	
		23 Aug 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		08 Mar 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		22 Aug 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		07 Mar 2024	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		15 Oct 2024	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
	SD245	03 Aug 2018	Normal	<0.001	<0.001	<0.002	-	-	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-	
		03 Nov 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		26 Mar 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		18 Aug 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		28 Feb 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		23 Aug 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		08 Mar 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		22 Aug 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		07 Mar 2024	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005		
		15 Oct 2024	Normal	<0.0002	<0.0002	<0.0010	<0.0002	<0.0002	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0020	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		15 Oct 2024	Field_D	<0.0002	<0.0010	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0023	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		
		15 Oct 2024	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0031	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002		

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.01	0.01	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																													Risk Characterisation	Immediate Response Actions
Location Code	**Date**																																
Eastern PFAS Contamination Area																																	
MW018	12 Sep 2017	30.40	1.01	42.70	-	55.10																												
	30 Aug 2018	13.00	0.46	21.10		-																												
		15.00	0.59	22.90		-																												
	17 May 2019	23.60	1.38	48.90	48.90	73.80																												
	12 Jul 2019	2.00	0.06	2.99		-																												
	04 Dec 2019	1.00	0.04	1.58		-																												
	28 Oct 2020	22.10	1.12	37.40	37.40	53.70																												
	31 Mar 2021	22.80	0.87	36.60	36.60	48.40																												
	18 Aug 2021	4.69	0.19	7.35	7.35	9.76																												
	04 Mar 2022	47.90	1.88	74.40	-	94.60																												
	25 Aug 2022	2.24	0.07	3.14	-	3.90																												
	09 Mar 2023	38.40	1.86	64.40	-	93.50																												
	23 Aug 2023	1.47	0.05	2.14	-	2.66																												
	07 Mar 2024	5.97	0.20	8.65	-	10.90																												
	17 Oct 2024	1.71	0.06	2.48	-	3.12	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	30.80	1.40	48.90		86.61																												
	65th%ile	22.42	0.93	36.96		54.89																												
MW112	19 Sep 2018	2.00	0.19	7.40		-																												
		2.00	0.21	6.90		-																												
	16 Oct 2024	0.56	0.06	2.24	-	3.32	Yes	No	No	Yes	No	No	No	No	-	No	No	No	No	No	No	No	No	-	-	-	-	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	2.00	0.21	7.33		-																												
	65th%ile	2.00	0.20	7.23		-																												
MW114	18 Sep 2018	0.38	0.45	5.48		-																												
	28 Oct 2020	0.48	0.39	5.77	5.77	11.50																												
	31 Mar 2021	2.15	1.32	17.40	17.35	33.10																												
	18 Aug 2021	0.21	0.20	2.78	2.78	5.91																												
	04 Mar 2022	0.91	0.67	7.81	-	15.50																												
	24 Aug 2022	2.09	1.07	14.70	-	27.30																												
	09 Mar 2023	4.19	2.02	26.10	-	49.70																												
	24 Aug 2023	3.97	2.39	22.00	-	43.90																												
	07 Mar 2024	3.88	1.47	21.70	-	38.20																												
	16 Oct 2024	1.84	1.18	12.00	-	25.90	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	3.95	1.91	21.94		43.62																												
	65th%ile	2.50	1.35	18.26		35.91																												

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																									Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																											
EQL		0.01	0.01	0.01		0.01																											
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																											
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																											
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																													
Location Code	**Date**																															
MW115	12 Oct 2018	0.52	0.04	1.52		-																										
	13 Oct 2018	0.57	0.02	1.57		-																										
	10 Jul 2019	0.85	0.02	1.36		-																										
	05 Dec 2019	0.81	0.02	1.58		-																										
	28 Oct 2020	0.55	0.02	1.09	1.09	1.95																										
	31 Mar 2021	0.46	0.01	0.78	0.78	1.37																										
	18 Aug 2021	0.34	0.01	0.61	0.61	1.02																										
	04 Mar 2022	0.20	0.01	0.56	-	0.94																										
	24 Aug 2022	0.10	0.01	0.26	-	0.47																										
	08 Mar 2023	0.16	0.01	0.50	-	0.85																										
	24 Aug 2023	0.14	0.01	0.56	-	0.91																										
	08 Mar 2024	0.12	0.01	0.42	-	0.75																										
	16 Oct 2024	0.16	0.01	0.58	-	1.11	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.65	0.02	1.54		1.35																										
	65th%ile	0.52	0.02	1.13		0.98																										
MW116	13 Sep 2018	0.02	0.01	0.02		-																										
	10 Jul 2019	0.02	0.01	0.03		-																										
	28 Oct 2020	0.01	0.01	0.08	0.08	0.20																										
	31 Mar 2021	0.01	0.01	0.07	0.07	0.17																										
	18 Aug 2021	0.01	0.01	0.13	0.13	0.36																										
	04 Mar 2022	0.02	0.01	0.13	-	0.32																										
	24 Aug 2022	0.01	0.01	0.10	-	0.26																										
	10 Mar 2023	0.01	0.01	0.11	-	0.33																										
	24 Aug 2023	0.02	0.01	0.18	-	0.41																										
	08 Mar 2024	0.02	0.01	0.23	-	0.57																										
	16 Oct 2024	0.01	0.01	0.19	-	0.67	Yes	No	No	No	No	No	No	No	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	NR	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring. Note that increasing PFAS concentrations are relatively low so risk response downgraded from high to elevated
	85th%ile	0.02	0.01	0.16		0.41																										
	65th%ile	0.02	0.01	0.13		0.35																										
MW139	12 Sep 2018	2.70	0.04	4.30		-																										
	11 Jul 2019	2.10	0.04	3.60		-																										
	05 Dec 2019	2.20	0.03	3.70		-																										
	28 Oct 2020	2.04	0.04	3.36	3.36	3.89																										
	31 Mar 2021	2.85	0.04	4.32	4.32	4.83																										
	18 Aug 2021	2.13	0.04	3.47	3.47	3.98																										
	03 Mar 2022	2.32	0.04	3.55	-	3.95																										
	25 Aug 2022	1.70	0.03	2.66	-	2.98																										
	09 Mar 2023	1.93	0.03	2.97	-	3.36																										
	24 Aug 2023	2.15	0.04	3.25	-	3.62																										
	08 Mar 2024	1.39	0.02	1.92	-	2.09																										
	16 Oct 2024	1.81	0.03	2.72	-	3.01	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	2.51	0.04	4.00		3.98																										
	65th%ile	2.18	0.04	3.58		3.92																										

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																												Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																														
EQL		0.01	0.01	0.01		0.01																														
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																														
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																														
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																																
Location Code	**Date**																																		
Former B Squadron																																			
MW135	10 Oct 2018	2.00	0.09	3.80		-																													
		1.80	0.09	3.50		-																													
	10 Jul 2019	3.90	0.19	9.40		-																													
	04 Dec 2019	2.60	0.12	4.60		-																													
	28 Oct 2020	2.37	0.07	4.10	4.10	4.69																													
	31 Mar 2021	9.54	0.34	23.50	23.54	27.20																													
	18 Aug 2021	2.41	0.07	4.11	4.11	4.74																													
	04 Mar 2022	1.78	0.05	2.82	-	3.25																													
	24 Aug 2022	0.55	0.02	1.18	-	1.40																													
	09 Mar 2023	11.80	0.15	14.20	-	15.50																													
	24 Aug 2023	0.42	0.02	0.93	-	1.11																													
	07 Mar 2024	12.70	0.14	15.00	-	16.10																													
	16 Oct 2024	0.21	0.01	0.68	-	0.85	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	Yes	Yes	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	10.33	0.16	14.48		16.07																													
	65th%ile	2.80	0.12	5.32		10.66																													
Former Fire Station																																			
MW105	17 Jul 2018	0.83	0.05	2.13		-																													
	31 Aug 2018	21.00	2.40	76.00		-																													
	12 Jul 2019	26.00	1.60	75.00		-																													
	03 Dec 2019	26.00	1.60	68.00		-																													
	29 Oct 2020	25.80	1.65	63.40	63.40	91.30																													
	31 Mar 2021	29.60	1.64	60.90	60.90	84.00																													
	18 Aug 2021	27.30	1.62	60.70	60.70	86.40																													
	03 Mar 2022	16.90	1.03	37.80	-	53.60																													
	24 Aug 2022	25.30	1.65	60.70	-	86.10																													
	09 Mar 2023	28.00	1.80	67.70	-	98.30																													
	24 Aug 2023	37.60	3.10	99.20	-	143.00																													
	07 Mar 2024	27.00	1.92	66.80	-	95.00																													
	16 Oct 2024	31.00	3.13	88.70	-	136.00	Yes	Yes	No	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	28.56	2.09	75.35		98.14																													
	65th%ile	27.05	1.67	67.75		93.34																													

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.01	0.01	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																													Risk Characterisation	Immediate Response Actions
Location Code	**Date**																																
MW128	18 Jul 2018	22.00	0.36	27.00		-																												
	31 Aug 2018	380.00	18.00	620.00		-																												
		490.00	19.00	780.00		-																												
	12 Jul 2019	510.00	17.00	750.00		-																												
	03 Dec 2019	570.00	27.00	940.00		-																												
	29 Oct 2020	483.00	17.80	731.00	731.00	919.00																												
	31 Mar 2021	876.00	26.90	1300.00	1295.00	1620.00																												
	18 Aug 2021	461.00	19.40	767.00	767.00	1000.00																												
	03 Mar 2022	67.20	4.52	150.00	-	199.00																												
	12 Jul 2022	52.40	5.32	152.00	151.60	220.00																												
	24 Aug 2022	152.00	8.35	315.00	-	428.00																												
	09 Mar 2023	6.05	0.15	8.80	-	11.40																												
	24 Aug 2023	786.00	32.70	1200.00	-	1490.00																												
	07 Mar 2024	763.00	27.10	1100.00	-	1320.00																												
	16 Oct 2024	36.10	2.71	78.60	-	114.00	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	764.15	27.01	1145.00		1456.00																												
	65th%ile	499.00	19.18	772.85		1064.00																												
MW345	17 Jan 2022	6.60	0.82	17.80	17.80	27.50																												
	19 May 2022	9.62	0.88	22.50	22.52	32.80																												
	16 Oct 2024	6.25	0.60	15.10	-	22.40	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	-	-	-	-	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	9.17	0.87	21.80		32.01																												
	65th%ile	8.56	0.86	20.86		30.95																												
Former Fire Training Area																																		
MW131	21 Sep 2018	5.30	0.26	7.40		-																												
		5.30	0.27	7.90		-																												
	09 Jul 2019	16.00	0.79	23.20		-																												
	03 Dec 2019	11.00	0.46	15.00		-																												
	28 Oct 2020	5.88	0.28	8.83	8.83	11.80																												
	31 Mar 2021	8.08	0.47	13.00	13.05	18.80																												
	19 Aug 2021	5.32	0.27	8.12	8.12	11.20																												
	03 Mar 2022	5.75	0.39	9.30	-	13.30																												
	26 Aug 2022	163.00	20.70	403.00	-	656.00																												
	07 Oct 2022	45.30	3.60	82.10	-	124.00																												
	09 Mar 2023	75.50	5.98	127.00	-	190.00																												
	25 Aug 2023	36.20	3.35	63.60	-	97.00																												
	07 Mar 2024	3.69	0.69	9.64	-	16.50																												
	16 Oct 2024	24.50	2.47	40.90	-	61.70	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	51.34	4.08	91.08		176.80																												
	65th%ile	15.00	0.77	21.56		102.40																												

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.01	0.01	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																													Risk Characterisation	Immediate Response Actions
Location Code	**Date**																																
Former Helicopter Squadron																																	
MW102	21 Sep 2018	1.90	0.19	4.50		-																											
		3.30	0.17	5.60		-																											
	08 Jul 2019	0.36	0.12	1.96		-																											
	03 Dec 2019	0.37	0.14	3.17		-																											
	29 Oct 2020	0.88	0.02	1.42	1.42	1.86																											
	31 Mar 2021	0.98	0.04	1.71	1.71	2.38																											
	18 Aug 2021	1.39	0.20	4.35	4.35	6.72																											
	03 Mar 2022	1.47	0.18	3.74	-	5.48																											
	24 Aug 2022	1.04	0.16	3.15	-	4.78																											
	09 Mar 2023	0.42	0.03	0.84	-	1.20																											
	24 Aug 2023	1.92	0.19	3.77	-	5.39																											
	07 Mar 2024	0.10	0.01	0.16	-	0.16																											
	16 Oct 2024	0.39	0.03	0.77	-	1.07	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	1.91	0.19	4.40		5.48																											
	65th%ile	1.40	0.17	3.74		5.12																											
Lavarack Golf Course and Sporting Fields																																	
MW065	14 Sep 2017	17.50	0.37	57.70	-	64.00																											
	17 Oct 2018	8.70	0.25	17.70		-																											
		8.20	0.22	17.40		-																											
	04 Dec 2019	7.50	0.19	15.70		-																											
	29 Oct 2020	8.23	0.18	15.40	15.40	18.40																											
	31 Mar 2021	10.80	0.23	18.00	17.99	21.70																											
	18 Aug 2021	8.78	0.24	16.20	16.15	19.60																											
	03 Mar 2022	9.00	0.29	17.00	-	21.30																											
	25 Aug 2022	9.83	0.24	17.00	-	20.70																											
	08 Mar 2023	12.90	0.30	21.80	-	26.50																											
	24 Aug 2023	9.93	0.33	19.70	-	24.50																											
	08 Mar 2024	7.54	0.09	9.56	-	10.60																											
	16 Oct 2024	10.20	0.33	21.80	-	27.50	Yes	Yes	No	Yes	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	NR	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	11.54	0.31	20.44		26.10																											
	65th%ile	9.85	0.26	17.75		22.26																											
MW120	13 Sep 2018	0.02	0.01	0.17		-																											
	12 Jul 2019	0.03	0.01	0.16		-																											
	29 Oct 2020	0.14	0.01	0.27	0.27	0.37																											
	31 Mar 2021	0.12	0.01	0.28	0.28	0.52																											
	18 Aug 2021	0.12	0.01	0.21	0.21	0.31																											
	03 Mar 2022	0.12	0.01	0.19	-	0.26																											
	24 Aug 2022	0.10	0.01	0.16	-	0.26																											
	08 Mar 2023	0.08	0.01	0.11	-	0.14																											
	24 Aug 2023	0.12	0.01	0.16	-	0.19																											
	08 Mar 2024	0.08	0.01	0.11	-	0.15																											
	16 Oct 2024	0.07	0.01	0.09	-	0.12	Yes	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.12	0.01	0.25		0.37																											
	65th%ile	0.12	0.01	0.19		0.29																											

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.01	0.01	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																														
Location Code	**Date**																																
MW121	13 Sep 2018	0.04	0.01	0.29		-																											
	09 Jul 2019	0.02	0.01	0.30		-																											
	29 Oct 2020	0.06	0.01	0.39	0.39	0.48																											
	31 Mar 2021	0.06	0.01	0.33	0.33	0.40																											
	18 Aug 2021	0.06	0.01	0.34	0.34	0.42																											
	03 Mar 2022	0.06	0.01	0.32	-	0.40																											
	24 Aug 2022	0.07	0.01	0.37	-	0.45																											
	08 Mar 2023	0.08	0.01	0.50	-	0.65																											
	24 Aug 2023	0.11	0.01	0.41	-	0.49																											
	08 Mar 2024	0.07	0.01	0.33	-	0.41																											
	16 Oct 2024	0.04	0.01	0.68	-	0.98	Yes	No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	No	NR	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	0.08	0.01	0.40		0.49																											
	65th%ile	0.07	0.01	0.37		0.47																											
MW122	26 Sep 2018	3.80	0.11	5.30		-																											
	09 Jul 2019	3.10	0.08	4.30		-																											
	05 Dec 2019	3.10	0.10	4.60		-																											
	29 Oct 2020	1.89	0.05	2.65	2.65	3.07																											
	31 Mar 2021	0.10	0.01	0.16	0.16	0.21																											
	18 Aug 2021	0.85	0.03	1.24	1.24	1.51																											
	03 Mar 2022	2.20	0.01	2.99	-	3.10																											
	24 Aug 2022	2.88	0.08	4.13	-	4.83																											
	08 Mar 2023	2.37	0.07	3.31	-	3.86																											
	24 Aug 2023	3.56	0.10	4.70	-	5.62																											
	08 Mar 2024	0.01	0.01	0.01	-	0.01																											
	16 Oct 2024	2.78	0.06	3.83	-	4.44	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	3.33	0.10	4.65		4.78																											
	65th%ile	2.99	0.08	4.22		3.52																											
MW123I	18 Sep 2018	0.10	0.01	0.30		-																											
	10 Jul 2019	0.02	0.01	1.20		-																											
	05 Dec 2019	0.02	0.01	1.00		-																											
	28 Oct 2020	0.01	0.01	0.70	0.70	1.38																											
	31 Mar 2021	0.01	0.01	0.37	0.37	0.73																											
	18 Aug 2021	0.01	0.01	0.51	0.51	0.98																											
	03 Mar 2022	0.01	0.01	0.99	-	2.20																											
	24 Aug 2022	0.01	0.01	0.75	-	1.28																											
	08 Mar 2023	0.04	0.06	14.40	-	26.10																											
	24 Aug 2023	0.01	0.01	0.41	-	0.83																											
	08 Mar 2024	0.01	0.01	0.60	-	1.06																											
	16 Oct 2024	0.01	0.01	0.47	-	0.88	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.03	0.01	1.10		2.16																											
	65th%ile	0.02	0.01	0.87		1.34																											

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.01	0.01	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																													Risk Characterisation	Immediate Response Actions
Location Code	**Date**																																
MW123S	18 Sep 2018	1.90	0.59	11.80		-																												
	10 Jul 2019	3.00	0.52	30.00		-																												
	04 Dec 2019	1.40	0.49	13.40		-																												
	29 Oct 2020	2.64	0.51	12.60	12.60	17.40																												
	31 Mar 2021	2.68	0.88	20.20	20.18	27.80																												
	18 Aug 2021	3.24	0.52	11.20	11.22	16.00																												
	03 Mar 2022	6.97	0.63	16.40	-	21.00																												
	25 Aug 2022	4.21	0.52	14.40	-	18.80																												
	08 Mar 2023	6.25	0.37	12.90	-	16.50																												
	24 Aug 2023	5.08	0.44	12.00	-	15.80																												
	08 Mar 2024	0.83	0.09	2.65	-	3.80																												
	16 Oct 2024	3.80	0.31	9.42	-	13.90	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	5.67	0.61	18.30		20.89																												
	65th%ile	3.73	0.52	13.90		18.17																												
Monocell																																		
MW014A	21 Apr 2020	10.60	0.99	25.40	25.40	36.60																												
	02 Mar 2021	21.90	1.44	37.10	37.10	50.90																												
	22 Feb 2022	9.91	0.66	16.90	-	23.70																												
	27 May 2022	12.00	0.86	22.20	22.20	31.10																												
	12 Jul 2022	14.80	1.02	26.00	26.00	35.40																												
	16 Oct 2024	0.26	0.01	0.61	-	0.82	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	17.64	1.19	30.44		42.32																												
	65th%ile	13.68	1.01	25.76		36.12																												
MW072	22 Jun 2016	0.55	6.60	-	-	-																												
	22 Sep 2017	25.80	10.00	352.00	-	524.00																												
	18 Oct 2018	20.00	3.10	94.00		-																												
	03 Dec 2019	42.00	1.20	66.00		-																												
	17 Apr 2020	100.00	5.56	180.00	180.30	249.00																												
	28 Oct 2020	80.70	2.94	120.00	119.70	152.00																												
	02 Mar 2021	170.00	3.94	221.00	220.60	266.00																												
	31 Mar 2021	150.00	4.37	211.00	211.40	258.00																												
	20 Aug 2021	82.80	2.63	128.00	127.70	164.00																												
	22 Feb 2022	126.00	2.92	168.00	-	204.00																												
	03 Mar 2022	96.00	2.78	133.00	-	165.00																												
	25 Aug 2022	60.30	2.03	97.50	-	126.00																												
	09 Mar 2023	76.30	2.30	116.00	-	152.00																												
	25 Aug 2023	50.00	2.07	89.30	-	119.00																												
	07 Mar 2024	42.00	1.52	74.10	-	96.50																												
	16 Oct 2024	29.60	1.37	56.40	-	79.20	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	127.20	4.43	211.50		260.80																												
	65th%ile	88.74	3.01	148.75		210.75																												

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.01	0.01	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																													Risk Characterisation	Immediate Response Actions
Location Code	**Date**																																
MW074	22 Jun 2016	0.12	2.50	-	-	-																												
	14 Sep 2017	51.20	3.62	121.00	-	168.00																												
	13 Oct 2018	32.00	2.70	72.00		-																												
	12 Jul 2019	53.00	2.70	106.00		-																												
	03 Dec 2019	45.00	2.50	90.00		-																												
	19 Apr 2020	57.60	2.78	107.00	106.80	143.00																												
	28 Oct 2020	47.90	2.68	89.00	89.00	121.00																												
	02 Mar 2021	33.00	1.98	64.60	64.60	89.30																												
	31 Mar 2021	41.80	2.07	75.20	75.20	98.80																												
	19 Aug 2021	54.20	3.37	107.00	107.10	148.00																												
	22 Feb 2022	39.80	2.61	80.50	-	112.00																												
	03 Mar 2022	45.60	2.78	83.20	-	111.00																												
	25 Aug 2022	55.00	2.34	96.50	-	129.00																												
	07 Mar 2023	71.70	2.83	116.00	-	155.00																												
	09 Mar 2023	51.00	2.85	92.40	-	126.00																												
	25 Aug 2023	59.50	3.18	111.00	-	149.00																												
	07 Mar 2024	38.30	1.94	72.80	-	95.60																												
	16 Oct 2024	47.50	2.57	85.30	-	118.00	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	56.56	3.05	110.00		150.20																												
	65th%ile	51.92	2.78	103.63		140.20																												
MW077	07 Mar 2023	0.58	0.02	1.04	-	1.34																												
	16 Oct 2024	0.66	0.03	0.97	-	1.22	Yes	No	No	No	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Negligible potential for risk profile change	Continue monitoring
MW106	31 Aug 2018	0.09	0.01	0.21		-																												
		0.09	0.01	0.23		-																												
	12 Jul 2019	0.04	0.01	0.14		-																												
	03 Dec 2019	0.08	0.01	0.28		-																												
	28 Oct 2020	0.09	0.01	0.21	0.21	0.28																												
	31 Mar 2021	0.05	0.01	0.12	0.12	0.20																												
	18 Aug 2021	0.10	0.01	0.35	0.35	0.48																												
	03 Mar 2022	0.05	0.01	0.17	-	0.23																												
	25 Aug 2022	0.09	0.01	0.25	-	0.37																												
	09 Mar 2023	0.18	0.01	0.53	-	0.79																												
	25 Aug 2023	0.40	0.01	0.72	-	0.82																												
	07 Mar 2024	0.08	0.01	0.14	-	0.19																												
	16 Oct 2024	0.07	0.01	0.14	-	0.19	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.13	0.01	0.41		0.77																												
	65th%ile	0.09	0.01	0.25		0.43																												
MW349	08 Jun 2022	41.30	1.50	63.20	63.20	79.80																												
	12 Jul 2022	33.20	1.52	54.90	54.90	70.70																												
	16 Oct 2024	24.20	1.60	48.60	-	70.00	Yes	Yes	No	Yes	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Negligible potential for risk profile change	Continue monitoring
	85th%ile	40.09	1.52	61.96		78.44																												
	65th%ile	38.47	1.51	60.30		76.62																												

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																												Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																														
EQL		0.01	0.01	0.01		0.01																														
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																														
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																														
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																																
Location Code	**Date**																																		
Stockpile Designated Area 2																																			
MW141	15 Oct 2018	0.76	0.07	3.46		-																													
	16 Oct 2018	0.87	0.10	3.97		-																													
	12 Jul 2019	0.72	0.08	3.02		-																													
	03 Dec 2019	0.58	0.05	2.18		-																													
	28 Oct 2020	0.64	0.07	2.32	2.32	3.58																													
	31 Mar 2021	0.77	0.07	2.38	2.38	3.56																													
	17 Aug 2021	0.37	0.04	1.15	1.15	1.73																													
	03 Mar 2022	0.51	0.05	1.57	-	2.33																													
	24 Aug 2022	0.52	0.04	1.64	-	2.37																													
	09 Mar 2023	0.44	0.04	1.40	-	2.07																													
	25 Aug 2023	0.42	0.03	1.26	-	1.76																													
	07 Mar 2024	0.28	0.02	0.80	-	1.09																													
	16 Oct 2024	0.27	0.03	0.71	-	1.11	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.76	0.07	2.96		3.50																													
	65th%ile	0.65	0.07	2.33		2.35																													
Suspected Aqueous Film Forming Foam (AFFF) Disposal Area																																			
MW101	20 Sep 2018	0.64	0.02	0.84		-																													
		0.57	0.01	0.80		-																													
	10 Jul 2019	0.53	0.01	0.81		-																													
	03 Dec 2019	0.62	0.02	0.98		-																													
	29 Oct 2020	1.27	0.04	2.07	2.07	2.63																													
	31 Mar 2021	0.34	0.02	0.68	0.68	1.17																													
	18 Aug 2021	0.67	0.03	1.27	1.27	1.78																													
	03 Mar 2022	0.37	0.02	0.79	-	1.41																													
	24 Aug 2022	0.37	0.01	0.90	-	1.55																													
	09 Mar 2023	0.20	0.01	0.35	-	0.56																													
	24 Aug 2023	0.69	0.02	1.04	-	1.34																													
	07 Mar 2024	0.03	0.01	0.04	-	0.06																													
	85th%ile	0.68	0.03	1.16		1.87																													
	65th%ile	0.63	0.02	0.94		1.54																													
Top, Middle and Lower Dams																																			
MW138	10 Oct 2018	4.60	0.29	10.10		-																													
		4.50	0.34	10.30		-																													
	29 Oct 2020	7.60	0.29	13.80	13.79	18.60																													
	31 Mar 2021	8.81	0.37	15.00	14.96	19.70																													
	18 Aug 2021	6.91	0.40	12.90	12.92	17.80																													
	03 Mar 2022	7.09	0.34	12.30	-	16.40																													
	24 Aug 2022	6.04	0.32	11.10	-	15.20																													
	09 Mar 2023	8.75	0.43	15.50	-	21.50																													
	24 Aug 2023	8.33	0.43	14.40	-	19.20																													
	07 Mar 2024	7.51	0.36	12.90	-	17.20																													
	16 Oct 2024	6.18	0.47	11.50	-	17.80	Yes	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	No	NR	TBV	NR	NR	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	8.60	0.42	14.79		19.68																													
	65th%ile	7.59	0.37	13.67		18.93																													

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.01	0.01	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																													Risk Characterisation	Immediate Response Actions
Location Code	**Date**																																
Base Boundary - On-Base																																	
MW002	13 Sep 2017	0.92	0.04	2.30	-	2.82																												
	16 Oct 2018	0.92	0.04	2.22		-																												
		0.94	0.04	2.34		-																												
	10 Jul 2019	2.30	0.02	3.07		-																												
	05 Dec 2019	0.81	0.01	2.31		-																												
	19 Apr 2020	2.04	0.04	3.18	3.18	3.65																												
	28 Oct 2020	0.79	0.02	1.23	1.23	1.41																												
	02 Mar 2021	2.88	0.06	4.20	4.20	4.79																												
	31 Mar 2021	2.72	0.06	4.91	4.91	5.61																												
	19 Aug 2021	1.28	0.02	2.53	2.53	2.88																												
	21 Feb 2022	1.26	0.03	2.08	-	2.43																												
	03 Mar 2022	1.46	0.03	2.20	-	2.46																												
	25 Aug 2022	0.82	0.01	1.35	-	1.52																												
	08 Mar 2023	3.16	0.06	5.09	-	5.89																												
	24 Aug 2023	0.78	0.01	1.39	-	1.57																												
	08 Mar 2024	1.87	0.03	2.76	-	3.10																												
	16 Oct 2024	0.91	0.01	2.17	-	2.49	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	2.62	0.06	3.95		5.08																												
	65th%ile	1.77	0.04	2.70		3.18																												
MW003	04 Oct 2017	0.04	0.01	0.04	-	0.04																												
	08 Oct 2018	0.02	0.01	0.00		-																												
	16 Oct 2018	0.02	0.01	0.00		-																												
		0.02	0.01	0.00		-																												
	12 Jul 2019	0.02	0.01	0.00		-																												
	23 Apr 2020	0.87	0.02	1.27	1.27	2.08																												
	29 Oct 2020	0.06	0.01	0.09	0.09	0.09																												
	02 Mar 2021	0.02	0.01	0.02	0.02	0.02																												
	31 Mar 2021	0.04	0.01	0.04	0.04	0.04																												
	18 Aug 2021	0.01	0.01	0.01	0.00	0.01																												
	22 Feb 2022	0.01	0.01	0.01	-	0.01																												
	03 Mar 2022	0.01	0.01	0.01	-	0.01																												
	24 Aug 2022	0.01	0.01	0.01	-	0.01																												
	08 Mar 2023	0.01	0.01	0.01	-	0.01																												
	24 Aug 2023	0.01	0.01	0.01	-	0.18																												
	08 Mar 2024	0.01	0.01	0.01	-	0.01																												
	16 Oct 2024	0.01	0.01	0.01	-	0.01	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Consider value of retaining this monitoring well
	85th%ile	0.04	0.01	0.04		0.12																												
	65th%ile	0.02	0.01	0.01		0.04																												

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.01	0.01	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																														
Location Code	**Date**																																
MW118	03 Sep 2018	0.02	0.01	0.05		-																											
	11 Jul 2019	0.02	0.01	0.04		-																											
	28 Oct 2020	0.01	0.01	0.05	0.05	0.09																											
	30 Mar 2021	0.02	0.01	0.04	0.04	0.09																											
	17 Aug 2021	0.01	0.01	0.04	0.04	0.10																											
	18 Feb 2022	0.01	0.01	0.03	-	0.07																											
	24 Aug 2022	0.01	0.01	0.03	-	0.08																											
	09 Mar 2023	0.01	0.01	0.04	-	0.12																											
	25 Aug 2023	0.07	0.01	0.11	-	0.37																											
	07 Mar 2024	0.01	0.01	0.02	-	0.07																											
	16 Oct 2024	0.01	0.01	0.03	-	0.10	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	**0.02**	**0.01**	**0.05**		**0.12**																											
	65th%ile	**0.02**	**0.01**	**0.04**		**0.10**																											
MW119	03 Sep 2018	0.78	0.01	0.80		-																											
	11 Jul 2019	0.02	0.03	0.03		-																											
	05 Dec 2019	0.02	0.04	0.04		-																											
	28 Oct 2020	0.01	0.05	0.04	0.04	0.75																											
	30 Mar 2021	0.01	0.06	0.03	0.03	0.63																											
	17 Aug 2021	0.01	0.10	0.05	0.05	1.08																											
	18 Feb 2022	0.02	0.11	0.06	-	1.19																											
	24 Aug 2022	0.02	0.11	0.07	-	0.91																											
	07 Mar 2023	0.04	0.13	0.10	-	1.13																											
	25 Aug 2023	0.05	0.15	0.11	-	1.20																											
	08 Mar 2024	0.04	0.14	0.09	-	1.00																											
	16 Oct 2024	0.04	0.14	0.09	-	1.30	Yes	No	No	No	No	No	No	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	NR	TBV	NR	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring. Note that increasing PFAS concentrations are relatively low so risk response downgraded from high to elevated
	85th%ile	**0.05**	**0.14**	**0.11**		**1.19**																											
	65th%ile	**0.03**	**0.11**	**0.08**		**1.11**																											
MW124	12 Jul 2019	0.02	0.01	0.00		-																											
	02 Nov 2020	0.01	0.01	0.01	0.01	0.18																											
	31 Mar 2021																																
	17 Aug 2021	0.01	0.01	0.01	0.00	0.01																											
	02 Mar 2022	0.02	0.02	0.02	0.02	0.02																											
	24 Aug 2022	0.01	0.01	0.01	-	0.01																											
	08 Mar 2023	0.01	0.01	0.01	-	0.01																											
	24 Aug 2023	0.01	0.01	0.01	-	0.01																											
	08 Mar 2024	0.01	0.01	0.01	-	0.01																											
	16 Oct 2024	0.02	0.01	0.02	-	0.02	Yes	No	No	No	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	Yes	Yes	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	**0.02**	**0.01**	**0.01**		**0.04**																											
	65th%ile	**0.01**	**0.01**	**0.01**		**0.01**																											

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																									Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.01	0.01	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																														
Location Code	**Date**																															Risk Characterisation	Immediate Response Actions
MW125I	26 Sep 2018	0.02	0.01	0.13		-																											
	11 Jul 2019	0.03	0.01	0.21		-																											
	02 Nov 2020	0.04	0.01	0.21	0.21	0.42																											
	31 Mar 2021	0.05	0.01	0.23	0.23	0.32																											
	17 Aug 2021	0.03	0.01	0.22	0.22	0.34																											
	02 Mar 2022	0.03	0.01	0.21	-	0.32																											
	24 Aug 2022	0.03	0.01	0.18	-	0.24																											
	08 Mar 2023	0.02	0.01	0.15	-	0.23																											
	24 Aug 2023	0.02	0.01	0.17	-	0.24																											
	08 Mar 2024	0.02	0.01	0.43	-	0.67																											
	16 Oct 2024	0.01	0.02	1.07	-	2.12	Yes	No	No	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	NR	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	0.04	0.01	0.23		0.42																											
	65th%ile	0.03	0.01	0.21		0.33																											
MW125S	18 Sep 2018	0.02	0.01	0.30		-																											
	11 Jul 2019	0.02	0.01	0.21		-																											
	02 Nov 2020	0.02	0.01	0.26	0.26	0.75																											
	31 Mar 2021	0.01	0.01	0.21	0.21	0.29																											
	17 Aug 2021	0.01	0.01	0.96	0.96	1.97																											
	02 Mar 2022	0.01	0.02	1.37	-	3.19																											
	24 Aug 2022	0.02	0.01	0.70	-	1.17																											
	08 Mar 2023	0.02	0.01	0.60	-	0.89																											
	24 Aug 2023	0.03	0.04	2.31	-	3.83																											
	08 Mar 2024	0.04	0.08	3.86	-	6.11																											
	16 Oct 2024	0.05	0.11	4.10	-	7.71	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring. Note that the increasing PFOS concentrations are associated with relatively low concetrations so risk response downgraded from high to elevated.
	85th%ile	0.03	0.03	1.98		3.80																											
	65th%ile	0.02	0.01	0.92		2.64																											
Off-Base																																	
MW205S	12 Sep 2018	0.02	0.01	0.02		-																											
	08 Jul 2019	0.02	0.01	0.02		-																											
	03 Nov 2020	0.02	0.01	0.04	0.04	0.04																											
	31 Mar 2021	0.02	0.01	0.04	0.04	0.04																											
	19 Aug 2021	0.02	0.01	0.04	0.04	0.04																											
	03 Mar 2022	0.02	0.01	0.04	-	0.04																											
	24 Aug 2022	0.02	0.01	0.05	-	0.05																											
	08 Mar 2023	0.03	0.01	0.06	-	0.06																											
	24 Aug 2023	0.03	0.01	0.06	-	0.06																											
	07 Mar 2024	0.02	0.01	0.04	-	0.04																											
	16 Oct 2024	0.02	0.01	0.03	-	0.03	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.03	0.01	0.06	0.04	0.06																											
	65th%ile	0.02	0.01	0.04	0.04	0.05																											

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																											Risk Characterisation	Immediate Response Actions
EQL		0.01	0.01	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																													
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																													
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																															
Location Code	**Date**																																	
MW212	11 Sep 2018	0.02	0.01	0.00		-																												
	03 Nov 2020	0.01	0.01	0.01	0.00	0.06																												
	31 Mar 2021	0.01	0.01	0.01	0.01	0.01																												
	18 Aug 2021	0.01	0.01	0.01	0.01	0.01																												
	03 Mar 2022	0.01	0.01	0.01	0.01	0.01																												
	24 Aug 2022	0.01	0.01	0.01	0.01	0.01																												
	07 Mar 2023	0.01	0.01	0.01	0.01	0.01																												
	24 Aug 2023	0.01	0.01	0.01	0.01	0.01																												
	07 Mar 2024	0.01	0.01	0.01	0.01	0.01																												
	16 Oct 2024	0.01	0.01	0.01	0.01	0.01	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**																												
	65th%ile	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**																												
MW217	11 Sep 2018	0.02	0.01	0.01		-																												
	09 Jul 2019	0.02	0.01	0.01		-																												
	03 Nov 2020	0.02	0.02	0.02	0.02	0.02																												
	31 Mar 2021																																	
	18 Aug 2021																																	
	03 Mar 2022	0.08	0.01	0.10	-	0.16																												
	22 Apr 2022	0.01	0.01	0.01	-	0.01																												
	24 Aug 2022	0.01	0.01	0.01	-	0.01																												
	08 Mar 2023	0.02	0.01	0.03	-	0.06																												
	24 Aug 2023	0.02	0.01	0.01	-	0.04																												
	07 Mar 2024	0.01	0.01	0.01	0.01	0.01																												
	16 Oct 2024	0.01	0.01	0.02	-	0.05	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change (low PFAS)	Continue monitoring
	85th%ile	**0.02**	**0.01**	**0.03**	**0.02**	**0.07**																												
	65th%ile	**0.02**	**0.01**	**0.02**	**0.02**	**0.04**																												
MW220S	12 Sep 2018	0.02	0.01	0.00		-																												
	06 Dec 2019	0.02	0.01	0.38		-																												
	03 Nov 2020	0.04	0.01	0.68	0.68	1.32																												
	01 Apr 2021	0.05	0.01	1.09	1.09	1.63																												
	18 Aug 2021	0.02	0.01	0.52	0.52	0.82																												
	03 Mar 2022	0.01	0.01	0.48	-	0.69																												
	24 Aug 2022	0.01	0.01	0.13	-	0.19																												
	07 Mar 2023	0.02	0.01	0.70	-	1.03																												
	24 Aug 2023	0.03	0.01	0.72	-	0.98																												
	07 Mar 2024	0.02	0.01	0.30	-	0.46																												
	16 Oct 2024	0.02	0.01	0.34	-	0.55	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	**0.04**	**0.01**	**0.71**	**0.97**	**1.31**																												
	65th%ile	**0.02**	**0.01**	**0.66**	**0.80**	**1.01**																												

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.01	0.01	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																														
Location Code	**Date**																																
MW226	29 Nov 2017	0.27	0.02	0.80		-																											
	09 Aug 2018	0.09	0.01	0.15		-																											
	04 Dec 2019	0.08	0.01	0.13		-																											
	29 Oct 2020	0.16	0.01	0.42	0.42	0.56																											
	30 Mar 2021	0.03	0.01	0.08	0.08	0.11																											
	19 Aug 2021	0.11	0.01	0.54	0.54	0.86																											
	02 Mar 2022	0.09	0.01	0.41	-	0.69																											
	25 Aug 2022	0.04	0.01	0.30	-	0.56																											
	08 Mar 2023	0.05	0.01	0.25	-	0.41																											
	24 Aug 2023	0.07	0.01	0.72	-	1.09																											
	08 Mar 2024	0.01	0.01	0.07	-	0.13																											
	16 Oct 2024	0.02	0.01	0.14	-	0.33	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.14	0.01	0.63		0.85																											
	65th%ile	0.09	0.01	0.42		0.63																											
MW232	12 Sep 2018	0.09	0.01	0.16		-																											
	09 Jul 2019	0.10	0.01	0.21		-																											
	06 Dec 2019	0.10	0.01	0.19		-																											
	03 Nov 2020	0.17		0.27	0.27	0.40																											
	31 Mar 2021	0.10	0.01	0.19	0.19	0.34																											
	20 Aug 2021	0.06		0.15	0.15	0.20																											
	03 Mar 2022	0.10	0.01	0.19	-	0.36																											
	24 Aug 2022	0.07	0.01	0.16	-	0.30																											
	09 Mar 2023	0.13	0.01	0.25	-	0.42																											
	24 Aug 2023	0.17	0.01	0.27	-	0.34																											
	07 Mar 2024	0.10	0.01	0.16	-	0.28																											
	16 Oct 2024	0.11	0.01	0.18	-	0.24	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.15	0.01	0.26		0.40																											
	65th%ile	0.10	0.01	0.20		0.35																											
MW233	11 Sep 2018	0.02	0.01	0.01		-																											
	11 Jul 2019	0.02	0.01	0.01		-																											
	06 Dec 2019	0.02	0.01	0.01		-																											
	03 Nov 2020	0.01	0.01	0.01	0.00	0.15																											
	31 Mar 2021	0.01	0.01	0.01	0.00	0.01																											
	18 Aug 2021	0.01	0.01	0.01	0.00	0.01																											
	03 Mar 2022	0.01	0.01	0.01	-	0.01																											
	24 Aug 2022	0.01	0.01	0.01	-	0.01																											
	07 Mar 2023	0.02	0.01	0.02	-	0.02																											
	24 Aug 2023	0.08	0.01	0.12	-	0.12																											
	07 Mar 2024	0.01	0.01	0.01	0.01	0.01																											
	16 Oct 2024	0.01	0.01	0.01	0.01	0.01	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.02	0.01	0.02		0.12																											
	65th%ile	0.02	0.01	0.01		0.02																											

Table B.6
Groundwater Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																											Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																													
EQL		0.01	0.01	0.01		0.01																													
PFAS NEMP 3.0 2025 Drinking Water*		**0.07**	**0.56**	**0.07**	**0.07**																													
PFAS NEMP 3.0 2025 Recreational Water**		**2**	**10**	**2**	**2**																													
PFAS NEMP 3.0 2025 95% Eco Marine Water***		**0.13**	**220**																															
Location Code	**Date**																																	
MW235S	10 Sep 2018	0.02	0.01	**0.02**		-																													
	08 Jul 2019	0.02	0.01	0.01		-																													
	03 Nov 2020	**0.02**	0.01	**0.02**	**0.02**	**0.05**																													
	31 Mar 2021	0.01	0.01	0.01	**0.00**	**0.02**																													
	18 Aug 2021	**0.12**	0.02	**0.15**	**0.15**	**0.18**																													
	03 Mar 2022	0.02	0.02	0.02	0.02	**0.02**																													
	25 Aug 2022	0.01	0.01	**0.01**	-	**0.04**																													
	08 Mar 2023																																	
	24 Aug 2023	0.01	0.01	0.01	-	**0.04**																													
	07 Mar 2024	0.01	0.01	0.01	-	**0.02**																													
	85th%ile	**0.02**	**0.02**	**0.02**		**0.08**																													
	65th%ile	**0.02**	**0.01**	**0.02**		**0.04**																													
MW236S	11 Sep 2018	**0.33**	**0.02**	**0.65**		-																													
	08 Jul 2019	**0.14**	0.01	**0.25**		-																													
	05 Dec 2019	**0.18**	0.01	**0.35**		-																													
	03 Nov 2020	**0.16**	**0.01**	**0.37**	**0.37**	**0.49**																													
	31 Mar 2021	**0.09**	0.01	**0.17**	**0.17**	**0.20**																													
	19 Aug 2021	**0.15**		**0.31**	**0.31**	**0.36**																													
	04 Mar 2022	**0.25**	**0.01**	**0.49**	-	**0.58**																													
	24 Aug 2022	**0.19**	**0.01**	**0.27**	-	**0.32**																													
	08 Mar 2023	**0.17**	0.01	**0.28**	-	**0.36**																													
	24 Aug 2023	**0.09**	0.01	**0.14**	-	**0.18**																													
	07 Mar 2024	**0.12**	0.01	**0.24**	-	**0.32**																													
	16 Oct 2024	**0.20**	0.01	**0.35**	-	**0.43**	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	Yes	No	Yes	Yes	No	Yes	No	No	NR	NR	NR	NR	**Low potential for risk profile change**	Continue monitoring
	85th%ile	**0.22**	**0.01**	**0.43**		**0.48**																													
	65th%ile	**0.18**	**0.01**	**0.33**		**0.36**																													

Notes:
TBV - to be verified. Data validation and site-specific conditions have been considered - further verification will be via continuation of the OMP
NR - not required. No further action is required at the moment.
Conditional formatting of PFAS concentrations for visual trend analysis limited to the wet season. Conditional formatting not used when PFAS measured below LOR.
Data measured below detection (<LOR) reported as a concentration equal to the LOR (and shaded in grey).
* = Drinking water guidelines apply only to Off-Base groundwater results.
** = Recreation guidelines apply to On-Base and Off-Base groundwater results.
*** = Ecological guidelines do not apply to On-Base or Off Base groundwater results.

Table B.7
Surface Water Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.002	0.001	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																														
Location Code	**Date**																																
Eastern PFAS Contamination Area																																	
SW119	16 Dec 2018	0.88	0.04	1.24		-																											
	29 Oct 2020	0.77	0.07	2.43	2.43	4.05																											
	29 Mar 2021	0.42	0.02	0.75	0.75	1.06																											
	18 Aug 2021	0.41	0.04	1.49	1.49	2.52																											
	01 Mar 2022	0.28	0.03	0.94	-	1.45																											
	10 Mar 2023	0.68	0.06	1.48	-	2.44																											
	22 Aug 2023	0.46	0.04	1.01	-	1.47																											
	04 Mar 2024	0.42	0.03	0.83	-	1.25																											
	09 Oct 2024	0.64	0.06	1.55	-	2.44	Yes	No	No	No	No	No	No	No	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No	NR	TBV	TBV	NR	**Elevated potential for risk profile change**	Verify high PFAS results and continue monitoring
	85th%ile	0.77	0.06	1.49		2.67																											
	65th%ile	0.58	0.04	1.37		2.34																											
SW121	10 Dec 2018	0.24	0.010	0.47		-																											
		0.22	0.02	0.44		-																											
	16 Dec 2018	0.77	0.038	1.27		-																											
	11 Jul 2019	0.065	0.010	0.155		-		0.77																									
	03 Feb 2020	0.6	0.063	1.9		-																											
	29 Oct 2020	1.19	0.09	3.32	3.32	5.09																											
	29 Mar 2021	0.52	0.04	1.28	1.28	1.9																											
	16 Aug 2021	1.14	0.22	6.66	6.66	10.7																											
	01 Mar 2022	0.36	0.03	0.82	-	1.2																											
	22 Aug 2022	0.48	0.05	1.45	-	2.3																											
	04 Mar 2024	0.36	0.02	0.7	-	0.93																											
	09 Oct 2024	2.84	0.32	12	-	17.8	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	TBV	TBV	TBV	**Elevated potential for risk profile change**	Verify elevated PFAS data and continue monitoring
	85th%ile	1.0	0.1	2.6		6.5																											
	65th%ile	0.56	0.05	1.37		3.00																											
Former Fire Station																																	
SW109	16 Dec 2018	5.2	0.4	8.3		-																											
	29 Mar 2021	72.5	5.61	128	127.9	178																											
	01 Mar 2022	89.2	11.3	192	-	298																											
	22 Aug 2022	109	6.36	165	-	216																											
	06 Mar 2023	82.2	4.82	134	-	181																											
	22 Aug 2023	47.2	3.55	78	-	112																											
	04 Mar 2024	32.4	1.47	51.8	-	66.5																											
	09 Oct 2024	161	2.54	196	-	230	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	No	No	No	No	TBV	NR	TBV	NR	**Elevated potential for risk profile change**	Verify elevated PFAS data and continue monitoring
	85th%ile	91.2	6.9	167.7		236.5																											
	65th%ile	81.2	5.5	133.4		189.8																											

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																												Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																														
EQL		0.002	0.001	0.01		0.01																														
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																														
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																														
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																																
Location Code	**Date**																																		
SW110	14 Dec 2018	13	0.51	34		-																													
	08 Jul 2019	1.6	0.048	3.8		-																													
	03 Feb 2020	0.25	0.013	0.66		-																													
	29 Mar 2021	1.28	0.06	2.75	2.75	3.58																													
	01 Mar 2022	17	1.14	30	-	43.3																													
	26 Apr 2022	0.02	0.010	0.03	-	0.03																													
	22 Aug 2022	47.7	2.54	73.1	-	95.6																													
	07 Oct 2022	32.9	1.51	50.5	-	65.8																													
	15 Mar 2023	36.9	2.67	70.2	-	98.4																													
	22 Aug 2023	23.2	1.48	38.2	-	53.3																													
	04 Mar 2024	28.3	1.24	44.5	-	58.2																													
	85th%ile	34.9	2.0	60.4		76.2																													
	65th%ile	25.8	1.4	41.4		53.7																													
Lavarack Golf Course and Sporting Fields																																			
SW129	10 Dec 2018	0.034	0.010	0.054		-																													
		0.036	0.02	0.056		-																													
	16 Dec 2018	0.055	0.010	0.12		-																													
	26 Mar 2021	0.29	0.03	0.6	0.6	0.94																													
	22 Apr 2022	0.03	0.010	0.09	-	0.09																													
	06 Mar 2023	0.2	0.04	0.51	-	1.14																													
	04 Mar 2024	0.11	0.02	0.29	-	0.55																													
	85th%ile	0.21	0.03	0.52		1.1																													
	65th%ile	0.10	0.02	0.27		0.8																													
SW130	10 Dec 2018	0.031	0.010	0.11		-																													
		0.023	0.010	0.106		-																													
	16 Dec 2018	0.13	0.010	0.33		-																													
	26 Mar 2021	0.69	0.03	1.27	1.27	1.68																													
	22 Apr 2022	0.04	0.010	0.23	-	0.36																													
	08 Mar 2023	0.08	0.010	0.31	-	0.45																													
	04 Mar 2024	0.4	0.02	0.8	-	1.04																													
	85th%ile	0.43	0.02	0.85		1.4																													
	65th%ile	0.13	0.01	0.33		0.8																													

Table B.7
Surface Water Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																									Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																											
EQL		0.002	0.001	0.01		0.01																											
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																											
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																											
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																													
Location Code	**Date**																															
Top, Middle and Lower Dams																																
SW139	02 Oct 2018	0.74	0.039	1.48		-																										
	29 Oct 2020	0.99	0.04	1.83	1.83	2.52																										
	29 Mar 2021	1.56	0.07	2.4	2.4	3.16																										
	22 Jun 2021	1.6	0.1	2.78	2.78	3.79																										
	16 Aug 2021	1.78	0.1	3.06	3.06	4.05																										
	01 Mar 2022	0.55	0.03	0.86	-	1.06																										
	22 Aug 2022	1.06	0.06	1.82	-	2.45																										
	06 Mar 2023	1.34	0.08	2.34	-	3.14																										
	22 Aug 2023	1.35	0.09	2.39	-	3.22																										
	04 Mar 2024	0.18	0.010	0.31	-	0.37																										
	09 Oct 2024	1.73	0.09	3.02	-	4.14	Yes	Yes	No	Yes	No	No	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	1.59	0.10	2.65		3.7																										
	65th%ile	1.35	0.08	2.38		3.2																										
SW140	03 Oct 2018	0.76	0.037	1.48		-																										
	10 Jul 2019	1.5	0.078	2.5		-																										
	05 Aug 2019	1.6	0.093	2.8		-																										
	03 Feb 2020	0.31	0.011	0.47		-																										
	29 Oct 2020	1.63	0.06	2.52	2.52	3.2																										
	29 Mar 2021	0.62	0.03	1.04	1.04	1.36																										
	16 Aug 2021	1.57	0.09	2.69	2.69	3.61																										
	01 Mar 2022	0.37	0.02	0.58	-	0.72																										
	22 Aug 2022	1.09	0.06	1.88	-	2.5																										
	06 Mar 2023	0.91	0.05	1.52	-	1.98																										
	22 Aug 2023	2.66	0.09	4.25	-	5.25																										
	04 Mar 2024	0.19	0.010	0.3	-	0.35																										
	09 Oct 2024	1.52	0.08	2.63	-	3.64	Yes	Yes	No	Yes	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	NR	NR	NR	TBV	Low potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	1.61	0.09	2.73		3.6																										
	65th%ile	1.50	0.06	2.42		2.9																										

Table B.7
Surface Water Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																								Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																											
EQL		0.002	0.001	0.01		0.01																											
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																											
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																											
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																												Risk Characterisation	Immediate Response Actions
Location Code	**Date**																															
SW144	02 Oct 2018	0.07	0.010	0.14		-																										
	08 Jul 2019	0.094	0.010	0.193		-																										
	05 Aug 2019	0.096	0.010	0.196		-																										
	03 Feb 2020	0.082	0.010	0.156		-																										
	13 May 2021	0.07	0.010	0.13	0.13	0.13																										
	16 Aug 2021	0.09	0.010	0.18	0.18	0.21																										
	01 Mar 2022	0.07	0.010	0.13	-	0.13																										
	22 Aug 2022	0.05	0.010	0.12	-	0.12																										
	10 Mar 2023	0.11	0.010	0.19	-	0.21																										
	22 Aug 2023	0.09	0.010	0.19	-	0.22																										
	04 Mar 2024	0.13	0.010	0.22	-	0.28																										
	09 Oct 2024	0.16	0.010	0.3	-	0.37	Yes	Yes	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	TBV	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring. Note that increasing PFAS concentrations are relatively low so risk response downgraded from high to elevated
	85th%ile	0.10	0.01	0.19		0.2																										
	65th%ile	0.09	0.01	0.19		0.2																										
Remaining on-Base																																
SW113	12 Dec 2018	0.054	0.010	0.106		-																										
	03 Feb 2020	0.065	0.010	0.165		-																										
	28 Oct 2020	0.22	0.03	0.41	0.41	1.03																										
	29 Mar 2021	0.1	0.010	0.26	0.26	0.33																										
	01 Mar 2022	0.08	0.010	0.22	-	0.26																										
	22 Aug 2022	0.05	0.010	0.2	-	0.27																										
	10 Mar 2023	0.09	0.010	0.24	-	0.3																										
	22 Aug 2023	0.07	0.010	0.23	-	0.36																										
	04 Mar 2024	0.05	0.010	0.1	-	0.1																										
	85th%ile	0.10	0.01	0.26		0.4																										
	65th%ile	0.08	0.01	0.23		0.3																										
SW120	12 Dec 2018	0.087	0.010	0.147		-																										
	29 Mar 2021	0.12	0.010	0.29	0.29	0.36																										
	22 Apr 2022	0.04	0.010	0.09	-	0.11																										
	04 Mar 2024	0.07	0.010	0.17	-	0.22																										
	85th%ile	0.11	0.01	0.24		0.3																										
	65th%ile	0.09	0.01	0.17		0.3																										

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																						Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																										
EQL		0.002	0.001	0.01		0.01																										
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																										
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																										
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																											Risk Characterisation	Immediate Response Actions
Location Code	**Date**																														
Base Boundary - On-base																															
SW126	10 Dec 2018	0.020	0.010	-	0	-																									
		0.020	0.010	-	0	-																									
	12 Jul 2019	0.020	0.010	-	0	-																									
	26 Mar 2021	0.010	0.010	0.010	0	0.010																									
	22 Apr 2022	0.010	0.010	0.010	-	0.010																									
	08 Mar 2023	0.010	0.010	0.010	-	0.010																									
	04 Mar 2024	0.010	0.010	0.010	-	0.010																									
	85th%ile	**0.02**	**0.01**	**0.01**		**0.01**																									
	65th%ile	**0.02**	**0.01**	**0.01**		**0.01**																									
SW128	10 Dec 2018	0.020	0.010	0.010	0	-																									
		0.020	0.010	0.010	0	-																									
	16 Dec 2018	0.1	0.010	0.163		-																									
	26 Mar 2021	0.1	0.010	0.15	0.15	0.15																									
	22 Apr 2022	0.04	0.010	0.06	-	0.06																									
	06 Mar 2023	0.13	0.010	0.34	-	0.49																									
	25 Aug 2023	0.03	0.010	0.05	-	0.05																									
	04 Mar 2024	0.07	0.010	0.13	-	0.16																									
	85th%ile	**0.10**	**0.01**	**0.16**		**0.29**																									
	65th%ile	**0.09**	**0.01**	**0.15**		**0.16**																									
SW132	10 Dec 2018	0.8	0.010	0.92		-																									
		0.51	0.01	0.63		-																									
	16 Dec 2018	0.47	0.016	0.75		-																									
	09 Jul 2019	1.5	0.079	3		-																									
	03 Feb 2020	0.28	0.011	0.44		-																									
	29 Oct 2020	0.74	0.03	1.12	1.12	1.39																									
	01 Apr 2021	1.39	0.08	2.55	2.55	3.5																									
	01 Mar 2022	0.58	0.03	0.99	-	1.25																									
	06 Mar 2023	1.2	0.06	2.02	-	2.63																									
	25 Aug 2023	2.96	0.14	5.48	-	7.07																									
	04 Mar 2024	0.23	0.010	0.36	-	0.42																									
	09 Oct 2024	3.06	0.21	6.31	-	9.13	Yes	Yes	No	Yes	Yes	Yes Yes Yes Yes	Yes Yes Yes Yes	Yes Yes Yes Yes	No	No	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	**1.45**	**0.08**	**2.78**		**4.4**																									
	65th%ile	**1.13**	**0.06**	**1.89**		**2.8**																									

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																								Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																										
EQL		0.002	0.001	0.01		0.01																										
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																											
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																											
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																												Risk Characterisation	Immediate Response Actions
Location Code	**Date**																															
SW133	22 Apr 2022	0.04	0.010	0.08	-	0.08																										
	06 Mar 2023	0.26	0.01	0.67	-	0.87																										
	05 Mar 2024	0.010	0.010	0.010	-	0.010																										
	85th%ile	0.19	0.01	0.49		0.63																										
	65th%ile	0.11	0.01	0.26		0.32																										
SW134	29 Oct 2020	0.010	0.010	0.010	0	0.010																										
	01 Apr 2021	0.010	0.010	0.010	0	0.010																										
	18 Aug 2021	0.010	0.010	0.010	0	0.010																										
	22 Apr 2022	0.010	0.010	0.010	-	0.010																										
	08 Mar 2023	0.010	0.010	0.010	-	0.010																										
	22 Aug 2023	0.010	0.010	0.010	-	0.010																										
	04 Mar 2024	0.010	0.010	0.010	-	0.010																										
	09 Oct 2024	0.010	0.010	0.010	-	0.010	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Consider removal from OMP
	85th%ile	0.01	0.01	0.01		0.01																										
	65th%ile	0.01	0.01	0.01		0.01																										
SW135	10 Dec 2018	0.072	0.010	0.109		-																										
		0.07	0.010	0.108		-																										
	12 Dec 2018	0.1	0.010	0.21		-																										
	03 Feb 2020	0.13	0.010	0.23		-																										
	28 Oct 2020	0.52	0.010	0.68	0.68	0.76																										
	29 Mar 2021	3.62	0.07	5.64	5.64	6.49																										
	22 Jun 2021	2.44	0.03	3.46	3.46	3.86																										
	18 Aug 2021	0.19	0.010	0.28	0.28	0.3																										
	01 Mar 2022	0.25	0.010	0.4	-	0.46																										
	22 Aug 2022	0.3	0.010	0.5	-	0.58																										
	06 Mar 2023	0.32	0.06	1.13	-	1.92																										
	22 Aug 2023	0.32	0.010	0.64	-	0.78																										
	04 Mar 2024	0.09	0.010	0.21	-	0.24																										
	09 Oct 2024	0.41	0.010	0.9	-	1.09	Yes	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	Yes	Yes	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	0.90	0.04	1.60		3.47																										
	65th%ile	0.32	0.01	0.61		1.01																										

Table B.7
Surface Water Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																				Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.002	0.001	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																														
Location Code	**Date**																																
SW136	10 Dec 2018	0.07	0.020	0.18		-																											
		0.083	0.020	0.193		-																											
	14 Dec 2018	0.1	0.020	0.22		-																											
	17 Dec 2018	0.020	0.020	0.010		-																											
	11 Jul 2019	0.69	0.034	1.01		-																											
	03 Feb 2020	0.2	0.014	0.42		-																											
	26 Mar 2021	0.36	0.01	0.52	0.52	0.62																											
	02 Mar 2022	0.25	0.020	0.35	-	0.4																											
	06 Mar 2023	0.3	0.01	0.61	-	0.78																											
	04 Mar 2024	0.28	0.020	0.42	-	0.48																											
	85th%ile	0.34	0.01	0.58		0.71																											
	65th%ile	0.28	0.01	0.42		0.61																											
Off-Base																																	
SW203	08 Dec 2017	0.13	0.012	0.228		-																											
	26 Sep 2018	0.15	0.010	0.32		-																											
	08 Jul 2019	0.9	0.035	1.55		-																											
	04 Feb 2020	0.35	0.014	0.53		-																											
	02 Nov 2020	0.17	0.01	0.36	0.36	0.48																											
	29 Mar 2021	0.42	0.02	0.73	0.73	0.93																											
	19 Aug 2021	0.36	0.02	0.73	0.73	0.92																											
	02 Mar 2022	0.3	0.01	0.53	-	0.65																											
	22 Aug 2022	0.21	0.010	0.4	-	0.51																											
	06 Mar 2023	1.05	0.04	1.8	-	2.3																											
	21 Aug 2023	0.4	0.02	0.8	-	1.06																											
	04 Mar 2024	0.2	0.01	0.34	-	0.41																											
	09 Oct 2024	1.28	0.06	2.57	-	3.46	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data, continue monitoring
	85th%ile	0.59	0.03	1.06		1.05																											
	65th%ile	0.37	0.02	0.73		0.93																											
SW205	08 Dec 2017	0.020	0.020	0.010		-																											
	27 Sep 2018	0.020	0.010	0.011		-																											
	09 Jul 2019	0.03	0.010	0.057		-																											
	02 Nov 2020	0.02	0.010	0.02	0.02	0.02																											
	29 Mar 2021	0.02	0.020	0.02	0.02	0.02																											
	19 Aug 2021	0.020	0.010	0.010	0	0.010																											
	02 Mar 2022	0.01	0.020	0.02	-	0.02																											
	22 Aug 2022	0.02	0.010	0.05	-	0.05																											
	09 Mar 2023	0.09	0.020	0.09	-	0.09																											
	21 Aug 2023	0.02	0.010	0.02	-	0.02																											
	09 Oct 2024	0.03	0.010	0.05	-	0.05	Yes	No	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No	Yes	Yes	No	No	No	No	TBV	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	0.03	0.01	0.05		0.05																											
	65th%ile	0.02	0.01	0.02		0.02																											

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																														
EQL		0.002	0.001	0.01		0.01																														
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																														
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																														
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																																
Location Code	Date																																		
SW211	30 Nov 2017	0.047	0.010	0.08		-																													
	17 Dec 2018	0.035	0.010	0.072		-																													
	09 Jul 2019	0.034	0.01	0.053		-																													
	01 Apr 2021	0.03	0.010	0.03	0.03	0.05																													
	19 Aug 2021	0.010	0.010	0.010	0	0.010																													
	03 Mar 2022	0.03	0.010	0.05	-	0.08																													
	25 Aug 2022	0.02	0.010	0.02	-	0.02																													
	09 Mar 2023	0.04	0.010	0.09	-	0.11																													
	22 Aug 2023	0.02	0.010	0.04	-	0.06																													
	07 Mar 2024	0.03	0.010	0.09	-	0.11																													
	09 Oct 2024	0.03	0.010	0.040	-	0.040	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.04	0.01	0.09		0.11																													
	65th%ile	0.03	0.01	0.07		0.08																													
SW212	30 Nov 2017	0.06	0.010	0.123		-																													
	17 Dec 2018	0.1	0.010	0.28		-																													
	09 Jul 2019	0.044	0.010	0.124		-																													
	01 Apr 2021	0.02	0.010	0.08	0.08	0.11																													
	19 Aug 2021	0.07	0.02	0.11	0.11	0.21																													
	03 Mar 2022	0.02	0.010	0.04	-	0.08																													
	25 Aug 2022	0.01	0.010	0.05	-	0.09																													
	09 Mar 2023	0.1	0.01	0.28	-	0.48																													
	22 Aug 2023	0.03	0.010	0.06	-	0.06																													
	07 Mar 2024	0.03	0.010	0.07	-	0.07																													
	09 Oct 2024	0.03	0.010	0.05	-	0.09	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.09	0.01	0.23		0.36																													
	65th%ile	0.06	0.01	0.12		0.11																													
SW217	17 Dec 2018	0.010	0.011	0.011		-																													
	02 Nov 2020	0.010	0.010	0.010	0.010	0.010																													
	29 Mar 2021	0.02	0.010	0.05	0.05	0.05																													
	19 Aug 2021	0.010	0.010	0.010	0.010	0.010																													
	02 Mar 2022	0.01	0.010	0.01	-	0.01																													
	22 Aug 2022	0.02	0.010	0.04	-	0.04																													
	06 Mar 2023	0.02	0.010	0.06	-	0.09																													
	21 Aug 2023	0.010	0.010	0.010	0.010	0.010																													
	04 Mar 2024	0.01	0.010	0.01	-	0.01																													
	09 Oct 2024	0.01	0.010	0.01	-	0.01	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.02	0.01	0.05		0.05																													
	65th%ile	0.02	0.01	0.02		0.03																													

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																														
EQL		0.002	0.001	0.01		0.01																														
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																														
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																														
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																																
Location Code	Date																																Risk Characterisation	Immediate Response Actions
SW220	30 Nov 2017	0.45	0.032	0.96		-																												
	19 Sep 2018	0.21	0.010	0.49		-																												
	08 Jul 2019	0.29	0.014	0.76		-																												
	04 Feb 2020	0.29	0.014	0.71		-																												
	02 Nov 2020	0.45	0.02	0.82	0.82	1.03																												
	01 Apr 2021	0.52	0.02	1.25	1.25	1.67																												
	16 Aug 2021	0.54	0.04	1.77	1.77	2.46																												
	02 Mar 2022	0.91	0.04	1.96	-	2.53																												
	22 Aug 2022	0.74	0.04	2.08	-	2.8																												
	09 Mar 2023	0.27	0.010	0.63	-	0.8																												
	21 Aug 2023	0.97	0.06	2.74	-	3.81																												
	04 Mar 2024	0.18	0.010	0.37	-	0.44																												
	08 Oct 2024	0.48	0.03	1.44	-	2.06	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	0.80	0.04	2.00		2.79																												
	65th%ile	0.52	0.03	1.33		2.50																												
SW227	24 Jan 2018	0.020	0.010	0.010		-																												
		0.020	0.010	0.010		-																												
	02 Aug 2018	0.002	0.001	0.0014		-																												
		0.002	0.001	0.0012		-																												
		0.002	0.001	0.0012		-																												
	07 Aug 2019	0.020	0.010	0.010		-																												
	03 Nov 2020	0.010	0.010	0.010	0	0.010																												
	26 Mar 2021	0.010	0.010	0.010	0	0.010																												
	18 Aug 2021	0.010	0.010	0.010	0	0.010																												
	28 Feb 2022	0.010	0.010	0.010	-	0.010																												
	22 Aug 2022	0.010	0.010	0.010	-	0.010																												
	08 Mar 2023	0.010	0.010	0.010	-	0.010																												
	22 Aug 2023	0.010	0.010	0.010	-	0.010																												
	07 Mar 2024	0.010	0.010	0.010	-	0.010																												
	15 Oct 2024	0.010	0.010	0.010	-	0.010	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Reference Location - No linkage to Base	Continue monitoring
	85th%ile	0.02	0.01	0.01		0.01																												
	65th%ile	0.01	0.01	0.01		0.01																												

Table B.7
Surface Water Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.002	0.001	0.01		0.01																												
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																												
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																														
Location Code	**Date**																																
SW232	19 Sep 2018	0.020	0.010	0.018		-																											
	02 Nov 2020	0.09	0.010	0.09	0.09	0.09																											
	29 Mar 2021	0.05	0.010	0.1	0.1	0.13																											
	16 Aug 2021	0.01	0.010	0.01	0.01	0.01																											
	02 Mar 2022	0.04	0.010	0.09	-	0.09																											
	22 Aug 2022	0.03	0.010	0.07	-	0.09																											
	09 Mar 2023	0.08	0.010	0.19	-	0.25																											
	21 Aug 2023	0.04	0.010	0.09	-	0.11																											
	04 Mar 2024	0.05	0.010	0.1	-	0.1																											
	08 Oct 2024	0.03	0.010	0.04	-	0.04	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.07	0.01	0.10		0.13																											
	65th%ile	0.05	0.01	0.09		0.11																											
SW233	19 Sep 2018	0.26	0.010	0.5		-																											
	09 Jul 2019	0.58	0.029	1.08		-																											
	04 Feb 2020	0.39	0.016	0.58		-																											
	02 Nov 2020	0.24	0.01	0.42	0.42	0.52																											
	29 Mar 2021	0.69	0.03	1.13	1.13	1.47																											
	16 Aug 2021	0.61	0.05	1.18	1.18	1.65																											
	02 Mar 2022	0.47	0.02	0.74	-	0.9																											
	22 Aug 2022	0.68	0.05	1.36	-	1.88																											
	06 Mar 2023	1.12	0.06	1.93	-	2.53																											
	21 Aug 2023	0.54	0.05	1.07	-	1.53																											
	04 Mar 2024	0.33	0.01	0.56	-	0.69																											
	08 Oct 2024	0.92	0.05	1.69	-	2.27	Yes	Yes	No	No	No	No	No	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring in wet season
	85th%ile	0.69	0.05	1.27		1.66																											
	65th%ile	0.60	0.04	1.11		1.60																											
SW242	24 Aug 2018	0.011	0.001	0.023		-																											
		0.0095	0.001	0.0215		-																											
	09 Jul 2019	0.037	0.010	0.098		-																											
	02 Nov 2020	0.06	0.010	0.06	0.06	0.06																											
	29 Mar 2021	0.06	0.010	0.13	0.13	0.16																											
	16 Aug 2021	0.02	0.010	0.04	0.04	0.04																											
	02 Mar 2022	0.08	0.010	0.13	-	0.13																											
	22 Aug 2022	0.06	0.010	0.12	-	0.12																											
	09 Mar 2023	0.25	0.010	0.41	-	0.49																											
	21 Aug 2023	0.34	0.010	0.4	-	0.42																											
	04 Mar 2024	0.12	0.010	0.17	-	0.19																											
	08 Oct 2024	0.09	0.010	0.11	-	0.11	Yes	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	0.19	0.01	0.29		0.20																											
	65th%ile	0.07	0.01	0.13		0.18																											

Table B.7
Surface Water Trigger Screening
0229 Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																								Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																										
EQL		0.002	0.001	0.01		0.01																										
PFAS NEMP 3.0 2025 Drinking Water*		0.07	0.56	0.07	0.07																											
PFAS NEMP 3.0 2025 Recreational Water**		2	10	2	2																											
PFAS NEMP 3.0 2025 95% Eco Marine Water***		0.13	220																												Risk Characterisation	Immediate Response Actions
Location Code	**Date**																															
SW243	24 Aug 2018	**0.0025**	0.001	**0.0062**		-																										
		0.0027	0.001	**0.0065**		-																										
	09 Jul 2019	0.020	0.010	0.010		-																										
	04 Feb 2020	0.020	0.010	0.010		-																										
	02 Nov 2020	**0.01**	0.010	**0.01**	**0.01**	**0.01**																										
	29 Mar 2021	**0.02**	0.010	**0.02**	**0.02**	**0.02**																										
	16 Aug 2021	0.010	0.010	0.010	0.010	0.010																										
	02 Mar 2022	0.010	0.010	0.010	0.010	0.010																										
	22 Aug 2022	**0.02**	0.010	**0.03**	-	**0.03**																										
	09 Mar 2023	**0.04**	0.010	**0.06**	-	**0.06**																										
	21 Aug 2023	0.010	0.010	0.010	0.010	0.010																										
	04 Mar 2024	**0.02**	0.010	**0.04**	-	**0.04**																										
	08 Oct 2024	0.010	0.010	0.010	0.010	0.010	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**NR**	**NR**	**NR**	**NR**	**Reference Location - No linkage to Base**	Continue Monitoring
	85th%ile	**0.02**	**0.01**	**0.03**		**0.04**																										
	65th%ile	**0.02**	**0.01**	**0.01**		**0.03**																										
SW244	02 Aug 2018	0.002	0.001	**0.0016**		-																										
		0.002	0.001	**0.0012**		-																										
		0.002	0.001	**0.0012**		-																										
	03 Nov 2020	0.010	0.010	0.010	0.010	0.010																										
	26 Mar 2021	0.010	0.010	0.010	0.010	0.010																										
	18 Aug 2021	0.010	0.010	0.010	0.010	0.010																										
	28 Feb 2022	0.010	0.010	0.010	0.010	0.010																										
	22 Aug 2022	0.010	0.010	0.010	0.010	0.010																										
	08 Mar 2023	0.010	0.010	0.010	0.010	0.010																										
	22 Aug 2023	0.010	0.010	0.010	0.010	0.010																										
	07 Mar 2024	0.010	0.010	0.010	0.010	0.010																										
	15 Oct 2024	0.010	0.010	0.010	0.010	0.010	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**NR**	**NR**	**NR**	**NR**	**Reference Location - No linkage to Base**	Consider removal from OMP
	85th%ile	**0.01**	**0.01**	**0.01**		**0.01**																										
	65th%ile	**0.01**	**0.01**	**0.01**		**0.01**																										

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																								Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																										
EQL		0.002	0.001	0.01		0.01																										
PFAS NEMP 3.0 2025 Drinking Water*		**0.07**	**0.56**	**0.07**	**0.07**																											
PFAS NEMP 3.0 2025 Recreational Water**		**2**	**10**	**2**	**2**																											
PFAS NEMP 3.0 2025 95% Eco Marine Water***		**0.13**	**220**																													
Location Code	**Date**																															
SW245	03 Aug 2018	0.002	0.001	0.001		-																										
		0.002	0.001	0.001		-																										
		0.002	0.001	0.001		-																										
	04 Feb 2020	0.020	0.010	0.010		-																										
	03 Nov 2020	0.010	0.010	0.010	0.010	0.010																										
	26 Mar 2021	0.010	0.010	0.010	0.010	0.010																										
	18 Aug 2021	0.010	0.010	0.010	0.010	0.010																										
	28 Feb 2022	0.010	0.010	0.010	0.010	0.010																										
	22 Aug 2022	0.010	0.010	0.010	0.010	0.010																										
	08 Mar 2023	0.010	0.010	0.010	0.010	0.010																										
	22 Aug 2023	0.010	0.010	0.010	0.010	0.010																										
	07 Mar 2024	0.010	0.010	0.010	0.010	0.010																										
	15 Oct 2024	**0.02**	0.010	**0.02**	-	**0.02**	**Yes**	**No**	**No**	**No**	**No**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**NR**	**NR**	**NR**	**NR**	**Reference Location - No linkage to Base**	Continue monitoring
	85th%ile	**0.01**	**0.01**	**0.01**		**0.01**																										
	65th%ile	**0.01**	**0.01**	**0.01**		**0.01**																										

Notes:

TBV - to be verified. Data validation and site-specific conditions have been considered - further verification will be via continuation of the OMP

NR - not required. No further action is required at the moment.

Conditional formatting of PFAS concentrations for visual trend analysis limited to the wet season. Conditional formatting not used when PFAS measured below LOR.

Data measured below detection (<LOR) reported as a concentration equal to the LOR (and shaded in grey).

* = Drinking water guidelines apply only to Off-Base surface water results.

** = Recreation guidelines apply to On-Base and Off-Base surface water results.

*** = Ecological guidelines apply to Off Base surface water and On-Base dam (i.e., SW139, SW140, and SW144) results.

Appendix C

Sampling and analysis quality plans

Prepared for
Department of Defence - Environment and Engineering Branch, PFAS Investigation and Management Branch (PFASIMB)
ABN: 68 706 814 312

PFAS OMP Lavarack Barracks

Sampling and Analysis Quality Plan

20-Feb-2024
PFAS Ongoing Monitoring Program
Doc No. 60612487_RP15_20240220_9
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Delivering a better world

PFAS OMP Lavarack Barracks

Sampling and Analysis Quality Plan

Client: Department of Defence - Environment and Engineering Branch, PFAS Investigation and Management Branch (PFASIMB)

ABN: 68 706 814 312

Prepared by

AECOM Australia Pty Ltd
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20-Feb-2024

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Quality Information

Document PFAS OMP Lavarack Barracks – Sampling and Analysis Quality Plan

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Reviewed by [redacted]

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			Name/Position	Signature
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0	16-Sep-2020	Revised for Issue	[redacted]	Original previously signed
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Table of Contents

1.0 Introduction 1
1.1 Preamble 1
1.2 SAQP Objectives 1
1.3 Scope of Works 1
1.4 Guidelines and Legislation 1
2.0 Site Identification and Conceptual Site Model 3
2.1 The Base and Management Area 3
2.2 Conceptual Site Model 3
3.0 Data Quality Assessment 5
3.1 Data Quality Objectives 5
3.1.1 Step 1 – State the Problem 5
3.1.2 Step 2 – Identify the Goal of the Study 6
3.1.3 Step 3 – Identify Information Inputs 6
3.1.4 Step 4 – Define the Boundaries of the Study 6
3.1.5 Step 5 – Develop the Analytical Approach 7
3.1.6 Step 6 – Specify Performance or Acceptance Criteria 7
3.1.7 Step 7 – Optimise the Design for Obtaining Data 8
3.2 Assessment of Data Quality 9
4.0 Sampling Location Rationale and Methodology 10
4.1 OMP 10
4.2 Proposed Schedule 10
4.2.1 Sampling Events 10
4.3 Sample Location Rationale 10
4.3.1 Groundwater Sampling Locations Rationale 10
4.3.2 Groundwater Gauging Locations 11
4.3.3 Groundwater Sampling Locations 11
4.3.4 Sediment Sampling Locations Rationale 12
4.3.5 Sediment Sampling Locations 12
4.3.6 Surface Water Sampling Locations Rationale 12
4.3.7 Surface Water Sampling Locations 12
4.4 Sample Collection and Handling 13
4.4.1 Groundwater Sampling 13
4.4.2 Sediment Sampling 13
4.4.3 Surface Water Sampling 14
4.4.4 Laboratory Analysis and Quality Assurance/Quality Control Sampling 14
4.4.5 Sample Handling and Transport to Laboratory 14
4.5 Calibration 15
4.6 Logistics 15
4.7 Analytical Suite and Laboratory Analysis Methods 15
4.7.1 Laboratory NATA Accreditation Details 15
4.7.2 Analytical Schedule 15
4.8 Sample Nomenclature 17
4.9 Defence ESdat Requirements 17
4.10 Adopted Screening Criteria 17
4.11 Waste Management 18
4.12 Quality Assurance/Quality Control Sampling 18
4.12.1 Field Duplicate and Inter-laboratory Duplicate Samples 18
4.12.2 Rinsate Samples 18
4.12.3 Trip Blank Samples 18
4.13 Fieldwork Documentation 19
4.13.1 Field Notes 19
4.13.2 Sample Labels 19
4.13.3 Chain of Custody Forms 19
4.13.4 Sampling Documentation 20
4.14 Reporting 20

4.14.1 Sampling Event Factual Report 20
4.14.2 Ongoing Monitoring Report 21
4.15 Deviation from OMP 21
5.0 References 22

Appendix A
Figures A

Appendix B
Lavarack Barracks Management Area B

Appendix C
Well Construction Details C

1.0 Introduction

1.1 Preamble

AECOM Australia Pty Ltd (AECOM) has prepared this Sampling and Analysis Quality Plan (SAQP) for the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Program at Lavarack Barracks (the "Base") and the Lavarack Barracks Management Area in the North Queensland Region, as defined in the *PFAS Management Area Plan (PMAP),* (Department of Defence, 2020).

The SAQP supports the *PFAS Ongoing Monitoring Plan (OMP)* which was included in the *Lavarack Barracks PFAS Management Area Plan (PMAP)*.

The purpose of the OMP is to collect data to enable Defence to maintain an up to date understanding of the distribution, concentration and transport (migration pathways and flow) of PFAS at the Base and within the Management Area. The data will assist in the timely identification of risks and inform Department of Defence's (Defence) approach to the management of PFAS, including updates and revisions to the PMAP.

1.2 SAQP Objectives

The objectives of this SAQP are to:

- Define the proposed scope of works in detail;
- Outline the proposed sampling methodology to be adopted;
- Outline the proposed data quality assurance and quality control (QA/QC) measures to be adopted; and
- Define the data collection requirements for the project.

1.3 Scope of Works

To meet the project objectives, the following scope of works are proposed as per the OMP for Lavarack Barracks (Department of Defence, 2020):

- Annual post-wet season sampling event March/April 2021, February/March 2022, February/March 2023 and February/March 2024 including:
  - Groundwater sampling of 38 monitoring wells within the Management Area; and
  - Surface water sampling at 31 locations (provided water is present), co-located with sediment sampling within the Management Area.
- Post-dry season sampling event in October 2020, August 2021, August/September 2022 and August/September 2023 including:
  - Groundwater sampling of 38 monitoring wells; and
  - Surface water sampling at 31 locations (provided water is present), co-located with sediment sampling within the Management Area.
- Preparation of reports including a sampling event factual report (following each biannual sampling event) and annual interpretative reports following the completion of each 12-month sampling period.
- The sampling locations are presented in **Appendix A.**

1.4 Guidelines and Legislation

The SAQP has been developed with reference to the following guidelines and legislation:

- PFAS National Environmental Management Plan (NEMP) 2.0, Heads of Environmental Protection Agencies (HEPA), 2020.

- National Environment Protection (Assessment of Site Contamination) Measure (NEPM), National Environment Protection Council (NEPC), 2013.
- Commonwealth of Australia Department of Defence, Routine Environment Water Quality Monitoring Manual, 2018.
- Commonwealth of Australia Department of Defence, Contamination Management Manual (DCMM), 2018 amended June 2021.
- Department of Health (DoH), Health Based Guidance Values for PFAS for use in site investigations in Australia, September 2019.
- National Health and Medical Research Council (NHMRC), Guidance on PFAS in Recreational Water. August 2019.
- Standards Australia 1998, reconfirmed in 2016. AS/NZ 5667:1998 Water Quality – Sampling.
- Australian and New Zealand Guidelines, 2018. Australian and New Zealand Guidelines for Fresh and Marine Water Quality.
- Environmental Protection (Water and Wetland Biodiversity) Policy 2019.

2.0 Site Identification and Conceptual Site Model

2.1 The Base and Management Area

Lavarack Barracks is located in Townsville, North Queensland. The Base covers an area of approximately 740 hectares (ha) and is a large working, training, and accommodation facility, which houses the Australian Army 3rd and 11th Brigades. The Base contains numerous workshops, washdown bays, interceptor pits, battery storage areas, bulk fuel area/ oil storage and distribution facilities (Department of Defence, 2020).

The Management Area is defined by the Ross River (to the north), sub catchment to the east and west and Mount Stuart to the south. The Management Area includes surrounding the residential suburbs of Murray, Douglas, Annandale, Idalia, Oonoonba and Wulguru, as shown in **Appendix B**.

2.2 Conceptual Site Model

The conceptual site model (CSM) for the Base and Management Area is presented in the Detailed Site Investigation (RPS/Wood, 2019) and referenced in the OMP which summarises the linkages between sources, pathways and receptors. The CSM was reviewed as part of the Ongoing Monitoring Report (OMR) (AECOM, 2023c) and no changes were identified to source, pathway or receptors within the Management Area. Comparison of data collected over the monitoring period (October 2020 to April 2023) to the historical dataset indicates that PFAS concentrations in groundwater and surface water are relatively stable since the CSM was developed and the plume extent has not changed (AECOM, 2023c). **Table 1** summarises a simplified CSM presented in the PMAP (Department of Defence, 2020).

Table 1 Simplified Conceptual Site Model

PFAS Sources	Pathways	Receptors
G and Central Sub-Catchment • Former Fire Station • Former Fire Training Area & Monocell • Former Helicopter Squadron • Suspected AFFF Disposal Area • Soil Stockpile Area 1	Surface Water Flow Lateral migration via stormwater drains and creeks to Top, Middle and Lower Dams (secondary sources). Seasonal groundwater / surface water interaction. Groundwater Flow Lateral migration via shallow groundwater as a plume. Bioaccumulation In plants and lower order species due to direct contact with PFAS in the environment. Biomagnification In the food-web via the consumption of contaminated lower order species.	Human Health • Recreational fishers consuming >3 meals per week from the Ross River and lakes in Idalia. • Consumers of homegrown produce (leafy greens, tuberous roots, eggs and poultry) irrigated with contaminated groundwater (under the upper limit scenario). Ecological • Moderately disturbed aquatic systems including aquatic plants, aquatic invertebrates, fish birds & mammals.
J/K and East Sub-Catchment • Former Fire Training Area & Monocell • Eastern PFAS Contamination Area • Former B Squadron • Stockpile Designated Area 2	Surface Water Flow Lateral migration via stormwater drains and creeks to the lakes in Idalia and Gordon Creek. Seasonal groundwater / surface water interaction. Groundwater Flow	Human Health • Recreational fishers consuming >3 meals per week from the lakes in Idalia. • Consumers of homegrown produce (leafy greens, tuberous roots, eggs and poultry) irrigated with

PFAS Sources	Pathways	Receptors
	Lateral migration via shallow groundwater as a plume. <u>Bioaccumulation</u> In plants and lower order species due to direct contact with PFAS in the environment. <u>Biomagnification</u> In the food-web via the consumption of contaminated lower order species.	contaminated groundwater under the upper limit scenario. <u>Ecological</u> • Moderately disturbed aquatic systems including; aquatic plants, aquatic invertebrates, fish birds & mammals.

3.0 Data Quality Assessment

3.1 Data Quality Objectives

The amended National Environmental Protection Measure (NEPM, Schedule B [2]) Guideline on Site Characterisation (2013) specifies that the nature and quality of the data produced in an investigation will be determined by the Data Quality Objectives (DQOs). As referenced by the NEPM, the DQO process is detailed in the United States Environmental Protection Agency (US EPA) *Guidance on Systematic Planning Using the Data Quality Objectives Process (EPA QA/G-4: EPA/240/B-06/001), February 2006.*

The US EPA defines the process as *'a strategic planning approach based on the Scientific Method that is used to prepare for a data collection activity. It provides a systematic procedure for defining the criteria that a data collection design should satisfy, including when to collect samples, where to collect samples, the tolerable level of decision errors for the study, and how many samples to collect'.*

The process of establishing appropriate DQOs is defined according to the following seven steps:

Table 2 The seven steps in defining DQOs

Step	Data Quality Objective Step
1	***State the problem*** – Define the problem that necessitates the study; identify the planning team, examine budget, schedule.
2	***Identify the goal of the study*** – State how environmental data will be used in meeting objectives and solving the problem, identify study questions, define alternative outcomes.
3	***Identify information inputs*** – Identify data and information needed to answer study questions.
4	***Define the boundaries of the study*** – Specify the target population and characteristics of interest, define spatial and temporal limits, scale of inference.
5	***Develop the analytic approach*** – Define the parameter of interest, specify the type of inference, and develop the logic for drawing conclusions from findings.
6	***Specify performance or acceptance criteria*** – Develop performance criteria for new data being collected or acceptable criteria for existing data being considered for use.
7	***Develop the plan for obtaining data*** – Select the resource-effective sampling and analysis plan that meets the performance criteria.

The approach adopted relative to the seven steps presented above is discussed below.

3.1.1 Step 1 – State the Problem

Defence and State agencies require up-to-date data to enable informed risk management decisions to protect human health and the environment, given that elevated concentrations of PFAS have been identified in environmental media. The primary pathway for the migration of PFAS off-Base is considered to be overland flow via surface drainage channels during seasonal rain events. Migration of PFAS from soils and surface water on-Base, to groundwater (via leaching / infiltration) and the subsequent transport downgradient as a plume via coarser grained sediments associated with paleochannels of the Ross River has also be identified as a potential pathway for off-Base migration of PFAS (Department of Defence, 2020).

Defence requires an understanding of the holistic effect of PFAS management response activities that have and will be implemented. The transport mechanisms for migration of PFAS are heavily influenced by seasonal variations and the SAQP sampling reflects the need to account for this seasonality.

The data collected by this SAQP will provide a detailed dataset that can be used to assist with assessment of temporal changes in PFAS concentrations in groundwater and surface water/sediment on-Base and off-Base. This will facilitate refinement of the CSM and associated risk, allow update of the

human health and ecological risk assessment and inform management decisions by Defence and government agencies.

3.1.2 Step 2 – Identify the Goal of the Study

The overall goal of the study is to establish a systematic routine groundwater and surface water/sediment sampling and analysis program which accounts for seasonal variations, to provide current and ongoing information on the distribution and migration of PFAS contaminants of potential concern in groundwater and surface water/sediment in the Management Area.

Specific goals of the program are to:

- Understand the changes and trends in the nature, extent and magnitude of PFAS concentrations in the groundwater, surface water and sediment within the Management Area between wet and dry season conditions;
- Understand if the nature, extent and magnitude of PFAS concentrations have changed significantly to warrant a revision to the human health and environmental risk assessments; and
- Understand if the nature, extent and magnitude of PFAS concentrations have changed significantly to warrant refinement of any existing management measures.

The decisions to be made based on the results of the investigation are:

- Do the analytical results and field observations allow for an assessment of risk(s) associated with complete or potentially complete PFAS source-pathway-receptor pathways?
- Do the analytical results and field observations allow for the interpretation of PFAS trends and do these trends warrant a re-evaluation of management actions?
- Does the OMP need to be refined to address uncertainty and would such a change(s) result in greater efficacy with respect to ongoing management or future intervention.

Note: a single trigger value for the reassessment of risk is not considered appropriate for the Management Area and a weight of evidence approach is to be adopted for reassessment of risk.

3.1.3 Step 3 – Identify Information Inputs

To allow assessment of the data against the study goal listed in Step 2 above, the following inputs will be considered:

- Physical setting of the Base;
- PFAS results, water levels and field observations from previous investigations;
- Meteorological data including rainfall;
- Field observations;
- Groundwater, sediment and surface water data collected and analysed for PFAS to assess the distribution and extent of PFAS, as part of this SAQP;
- Groundwater and surface water elevation data;
- Fate and transport mechanisms and behaviour of PFAS in the environment;
- Screening criteria (refer **Section 4.10**);
- Statistical analysis to identify trends;
- Advances in laboratory analytical approaches and changes in regulatory requirements; and
- Recommendations made in the preceding OMR and Sampling Event Factual Reports completed by AECOM (AECOM, 2021a; AECOM, 2021b; AECOM, 2021c; AECOM, 2022; AECOM, 2023a; AECOM, 2023b; AECOM, 2023c; AECOM, 2024).

3.1.4 Step 4 – Define the Boundaries of the Study

The spatial and temporal boundaries that apply for data collection are detailed below and will influence the decision-making process for ongoing monitoring:

- The spatial boundary for data collection and decision making is the Base and the wider Management Area. Three sampling locations are located in the Ross River to assist determination of base load of PFAS in Ross River. Refer to **Appendix A** for all sampling locations.
- The sampling completed as part of the SAQP includes groundwater, sediment and surface water, at the frequencies defined in **Section 4.3** to account for seasonality.
- The monitoring will be undertaken initially for three years (as outlined in the OMP, Department of Defence, 2020) followed by a review to assess the need for ongoing monitoring.

The SAQP will also cover the initial implementation period of the OMP (Department of Defence, 2020). The SAQP will also cover the extent required by specific characteristics of the Base and surrounds, and behaviour of the plume, measured against specified data trends.

3.1.5 Step 5 – Develop the Analytical Approach

The decision rules can be defined as:

- Analytical selection; all samples will be analysed for the extended PFAS suite.
- Analytical method selection for PFAS is based on achieving appropriate laboratory limit of reporting (LOR) in the various media to be analysed. Standard LORs will be used for the OMP Implementation.
- Sample locations have been selected with the objective of monitoring PFAS trends (temporal and seasonal), providing early warning of changes in the migration of PFAS in surface water and groundwater.
- If the laboratory quality assurance/quality control data are within the acceptable ranges, the data will be considered suitable for use.
- If PFAS concentrations are reported above the laboratory LOR, where it was previously <LOR, then it will be considered whether further assessment of the data is required.
- If PFAS is reported at a concentration that is consistently above the adopted screening criteria, then it will be considered that further assessment is required.
- If PFAS is reported at a concentration that is inside a trigger value or acceptable range, then it will be considered whether monitoring is continued or reduced, this assessment will be undertaken after three years of monitoring.

The decision on the acceptance of the analytical data will be made on the basis of the Data Quality Indicators (DQIs) as follows:

- **Precision:** A quantitative measure of the variability (or reproducibility) of data.
- **Accuracy**: A quantitative measure of the closeness of reported data to the “true” value.
- **Representativeness**: The confidence (expressed qualitatively) that data are representative of each media present on site.
- **Completeness**: A measure of the amount of useable data from a data collection activity.
- **Comparability**: The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.

Table 3 provides further specific details.

3.1.6 Step 6 – Specify Performance or Acceptance Criteria

Specific limits for the works included in the OMP (Department of Defence, 2020) are in accordance with the appropriate guidance made or endorsed by state and national regulations, appropriate indicators of data quality, and standard procedures for field sampling and handling.

This step also examines the certainty of conclusive statements based on the available new data collected. This should include the following points to quantify tolerable limits:

- A decision can be made based on a certainty assumption of 95% confidence in any given data set. A limit on the decision error will be 5% that a conclusive statement may be a false positive or false negative.
- A decision error in the context of the decision rule presented above would lead to either underestimation or overestimation of the risk level associated with a particular sampling area.
- Sampling errors may occur when the sampling program does not adequately detect the variability of a contaminant from point to point across the Base. To address this, the OMP outlines minimum numbers of samples proposed to be collected from each media.
- As such, there may be limitations in the data if aspects of the OMP cannot be implemented. Some examples of this scenario include but are not limited to:
  - Proposed surface water sample locations may be dry at the time of sampling.
  - Proposed groundwater well locations are damaged or destroyed and therefore cannot be sampled.
  - Proposed samples are not collected due to access being restricted to a given location.
- Measurement errors can occur during sample collection, handling, preparation, analysis and data reduction. To address this the following measures are proposed:
  - Collection of sufficient sample mass to facilitate analysis reported to standard laboratory detections limits. Collection of insufficient sample mass may result in raised detection limits.
  - Field staff to follow a standard procedure when collecting samples, including decontamination of tools, and use of appropriate sample containers and preservation methods.
  - Laboratories to follow a standard procedure when preparing samples for analysis and undertaking analysis. LOR may be increased for saline samples due to matrix interference for higher salinity samples.
  - Laboratories to report quality assurance/ quality control data for comparison with the DQIs established for the SAQP.
- **Table 3** provides acceptance criteria.

3.1.7 Step 7 – Optimise the Design for Obtaining Data

The methodology presented in this SAQP is designed to meet the project objectives described in **Section 1.2** and to achieve the nominated DQOs. Optimisation of the data collection process will be achieved by:

- Working closely with the analytical laboratories and sampling equipment suppliers to ensure that appropriate procedures and processes are developed and implemented prior to and during the fieldwork, to ensure that sample handling, and transport to and processing by the analytical laboratories is appropriate.
- Conducting sampling according to Defence and Australian Standards for the type of sampling being conducted (i.e. groundwater monitoring well sampling versus landholder bore water sampling). These standards are as follows:
  - Department of Defence (March 2018, Amended June 2021), *Contamination Management Manual.*
  - Standards Australia (AS/NZS5667.11–1998) *Water Quality – Sampling, part 11: Guidance on sampling of groundwater.*
  - Standards Australia (AS 4482.1-2005) *Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.*
  - Standards Australia (AS 4482.2-1999) *Guide to the sampling and investigation of potentially contaminated soil, Part 2: Volatile Substances.*
- Conducting sampling in accordance with AECOM's internal PFAS Sample Collection Guidance.

- Sampling conducted by suitably qualified and experienced field staff.
- Basing the sampling upon a CSM developed using the information available at the implementation of the SAQP. Updating the CSM as new data becomes available in the course of the implementation of the SAQP, as required; and
- Progressive review of the data throughout the initial three-year OMP period and modification of sampling programs to optimise the value of data generated.

If the objectives of the SAQP are not being met, the sampling design and approach will be reviewed and amended, as required.

3.2 Assessment of Data Quality

The quality of data collected as part of the sampling will be assessed on a range of factors including:

- Documentation and data completeness; and
- Data quality – comparability, representativeness, precision and accuracy of the analytical data.

The project target for data completeness is to achieve 95% of data as suitable for use.

The acceptance criteria for DQIs for samples are specified in **Table 3**.

Table 3 Acceptance Criteria for Data Quality Indicators for Sample Analysis

Data Quality Indicators	Acceptance Criteria
Water and Sediment Samples	
Rinsates (where equipment is decontaminated and reused)	Less than the laboratory LOR.
Field duplicates/Inter-lab duplicates	The relative percentage difference (RPD)s will be assessed as acceptable if less than or equal to 30% as per the NEPM Schedule B3. Where the results shows greater than 30% difference a review of the cause will be conducted (NEPM, 2013). It is noted that RPDs that exceed this range may be considered acceptable where: • Results are less than 10 times the LOR (no limit); • Results are less than 20 times the LOR and the RPD is less than 50%; and • Heterogeneous materials are encountered.
Laboratory duplicates	RPDs less than: • 20% for high level laboratory duplicates (i.e. >20 x LOR); and • 50% for medium level laboratory duplicates (i.e. 10 to 20 x LOR).
Matrix spikes	Recoveries between 70-130% of the theoretical recovery or as nominated in the laboratory's QC report, based on their historical database.
Method blanks	Less than the laboratory LOR.
Laboratory control samples	Recoveries between laboratories specified range for each particular analyte/analytical suite.

4.0 Sampling Location Rationale and Methodology

4.1 OMP

The OMP (Department of Defence, 2020) presents an overview of specific monitoring works to be undertaken and provides the basis for the preparation of this SAQP. The scope of works presented in this SAQP is consistent with that detailed in the OMP.

4.2 Proposed Schedule

4.2.1 Sampling Events

Groundwater, sediment and surface water sampling across the Management Area will be performed biannually with wet season sampling in February/March and a dry season sampling in August/September for an initial period of three years (or as instructed by Defence), with the initial sampling event completed in October 2020. In the event that the wet season is delayed, the sampling round will be conducted in March/April.

The proposed schedule of fieldworks across the initial three-year period is presented in **Table 4** below.

Table 4 Proposed Fieldwork Schedule

Sampling Round No.	Description of works	Proposed Schedule
1	Dry season groundwater, sediment and surface water sampling	October 2020
2	Wet season groundwater, sediment and surface water sampling	March/April 2021
3	Dry season groundwater, sediment and surface water sampling	August 2021
4	Wet season groundwater, sediment and surface water sampling	February/March 2022
5	Dry season groundwater, sediment and surface water sampling	August/September 2022
6	Wet season groundwater, sediment and surface water sampling	February/March 2023
7	Dry season groundwater, sediment and surface water sampling	August/September 2023
8	Wet season groundwater, sediment and surface water sampling	February/March 2024

4.3 Sample Location Rationale

4.3.1 Groundwater Sampling Locations Rationale

There are 38 groundwater monitoring wells identified for ongoing monitoring. These wells are located across the Base, Base boundary, Townsville City Council controlled public spaces, and one location on a private property. Stakeholder permission is required to access and sample MW226. No formal permits are required for collection of environmental samples under this SAQP.

The rationale for monitoring well selection for each area is summarised in **Table 4.**

Table 5 Rationale for Groundwater Monitoring Locations

Area	Rationale
On-Base	Sampling points have been selected both within and down-gradient of the identified source areas, to monitor the change in PFAS concentrations at each source area and confirm the level of risk identified in the DSI.
Base Boundary	The Base boundary sampling points act as 'sentinels' for potential changes in PFAS concentrations in ground water in the Off-Base Management Area. These points are considered critical to the understanding of risk to sensitive receptors in the Off-Base Management Area.
Off-Base	• Sampling locations within the Off-Base Management Area have been selected to assess the key PFAS migration pathways. • Confirm the understanding of risk and provide additional data points for use in determining both seasonal and longer-term trends in PFAS migration via pathways identified during the DSI.

4.3.2 Groundwater Gauging Locations

All locations are proposed to be gauged prior to each sampling event and are presented in **Figure 2**, in **Appendix A**.

4.3.3 Groundwater Sampling Locations

The groundwater locations to be monitored as part of the wet and dry season sampling events are provided in **Table 6** below and are presented in **Figure 2**, in **Appendix A**. Stakeholder access permission in the form of a Training Area Safety and Management Information System booking with Mount Stuart Training Area Range Control is required for access to MW124, MW125I, MW125S.

Table 6 Groundwater sampling locations

Management/Source Area	Wells	Number. of wells
Eastern PFAS Contamination Area	MW018, MW114, MW115, MW116, MW139	5
Former B Squadron	MW135	1
Former Fire Training Area	MW105, MW128, MW131	3
Former Helicopter Squadron	MW102	1
Lavarack Golf Course & Sporting Field	MW065, MW120, MW121, MW122, MW123S, MW123I	6
Monocell	MW072[1], MW074[1], MW106	3
Stockpile Designated Area 2	MW141	1
Suspected AFFF Disposal Area	MW101	1
Top, Middle and Lower Dams	MW138	1
Base Boundary	MW002[1], MW003[1], MW118[1], MW119[1], MW124, MW125I, MW125S	7
Off-Base	MW205S, MW212, MW217, MW220S, MW226, MW232, MW233, MW235S, MW236S	9
	Total	38

[1] Locations conflicting with the Water Quality Monitoring Program

4.3.4 Sediment Sampling Locations Rationale

The sediment locations to be monitored as part of the wet and dry season sampling events are provided in **Table 7** below and are presented in **Figure 3**, **Appendix A**. Stakeholder access permission is required to access and sample SW/SD211 and SW/SD212 which are located on private property. These locations have been selected to maintain consistency with the recent monitoring completed within the Management Area.

4.3.5 Sediment Sampling Locations

Table 7 Sediment sampling locations

Management/Source Area	Sampling locations	Number of locations
Eastern PFAS Contamination Area	SD119, SD121	2
Former Fire Station	SD109, SD110	2
Lavarack Golf Course & Sporting Field	SD129, SD130	2
Top, Middle and Lower Dams	SD139, SD140, SD144	3
On-Base Balance	SD113, SD120	2
Base Boundary	SD126, SD128, SD132, SD133, SD134, SD135, SD136	7
Off-Base	SD203, SD205, SD211, SD212, SD217, SD220, SD227, SD232, SD233, SD242, SD243, SD244, SD245	13
	Total	31

4.3.6 Surface Water Sampling Locations Rationale

The surface water locations to be monitored as part of the wet and dry season sampling events are provided in **Table 8** below and are presented in **Figure 3**, **Appendix A**. Stakeholder access permission is required to access and sample SW/SD211 and SW/SD212 which are located on private property. These locations have been selected to maintain consistency with the recent monitoring completed within the Management Area. Surface water locations are co-located with sediment sampling locations, and surface water will be collected where present.

4.3.7 Surface Water Sampling Locations

Table 8 Surface water sampling locations

Management/Source Area	Sampling locations	Number of locations
Eastern PFAS Contamination Area	SW119, SW121	2
Former Fire Station	SW109, SW110	2
Lavarack Golf Course & Sporting Field	SW129, SW130	2
Top, Middle and Lower Dams	SW139, SW140, SW144	3
On-Base Balance	SW113, SW120	2
Base Boundary	SW126, SW128, SW132, SW133, SW134, SW135, SW136	7
Off-Base	SW203, SW205, SW211, SW212, SW217, SW220, SW227, SW232, SW233, SW242, SW243, SW244, SW245	13
	Total	31

4.4 Sample Collection and Handling

4.4.1 Groundwater Sampling

The groundwater sampling methodology and schedule are presented in **Table 9**.

Table 9 Groundwater sampling methodology and schedule

Item	Details
Groundwater gauging	The depth to groundwater will be measured at the beginning of each sampling round, commencing with on Base wells and moving to off-Base locations and finishing with tidally influenced wells along Ross River and Idalia Lakes. All wells associated with the OMP are proposed to be gauged within the same day. Groundwater wells will also be gauged immediately prior to the collection of groundwater samples.
Sample Collection Methodology	Groundwater samples will be collected from all monitoring wells using no-purge methodology HydraSleeves™ as follows: • Where a HydraSleeve™ is used for sample collection, the target interval depths should be recorded. The HydraSleeve™ should not sit at the base of a monitoring well where sediment may be present. • In all cases, the installed position of the top of the HydraSleeves™ must be in the saturated screen and the length of saturated screen above the HydraSleeve must be at least as long as the HydraSleeve™, preferably at least 15 centimetres longer. This should allow the sampler to fill before the top of the device reaches the top of the saturated screen as it is pulled up through the water column and ensures that only water from the screen is collected as the sample. • Where the water column is measured to be less than 1.5 m but more than 0.5 m, a top weight will be added to the HydraSleeve™ before installation to ensure a sample can be collected. • HydraSleeve™ sampling devices will be left in monitoring wells for a minimum of 4 hours when deployed with bottom weights only, to allow stabilisation of the well following the slight disturbance caused by sampler deployment. • HydraSleeves™ with both top and bottom weights will be deployed and left in the well for a minimum of 24 hours, to allow stabilisation of the well and for the top weight to compress. Well construction details are presented in **Appendix C**. Once sampling is completed, new HydraSleeves™ will not be redeployed due to conflicts with other monitoring programs, potential presence of tree roots and loss of sampling equipment over the life of the program. Instead, HydraSleeves™ will be deployed during the gauging round at the beginning of the program and collected following a period of no less than 24 hours. A decontaminated steel bailer is to be used where insufficient water volume is able to be collected using HydraSleeves™.
Field Parameters	Temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation reduction potential (ORP), pH and observations of water quality will be recorded for all groundwater samples.
Sampling Schedule	The monitoring across the investigation area will include two sampling events, as detailed below: **Wet Season**: 38 monitoring wells across the Base and surrounding areas. **Dry Season**: 38 monitoring wells across the Base and surrounding areas.

4.4.2 Sediment Sampling

The sediment sampling methodology and schedule are presented in **Table 10**.

Table 10 Sediment sampling methodology and schedule

Item	Details
Sample Collection Methodology	Samples representative of potentially deposited sediments will be collected from within the water body if possible. Sediment samples will be collected using a trowel or gloved hand, where possible, or a sludge and sediment sampler. At each location, a new laboratory supplied container will be used for each sample.
Sampling Schedule	Sediment sampling will be conducted at 31 locations during both the wet and dry season sampling events.

4.4.3 Surface Water Sampling

The surface water sampling methodology and schedule are presented in **Table 11**.

Table 11 Surface water sampling methodology and schedule

Item	Details
Sample Collection Methodology	Samples to be collected from immediately below the water surface to minimise collection of sediment or floating materials in the samples. At each location, a new, laboratory supplied container will be lowered into the water with the cap immediately applied once the container is full. Where the waterway cannot be accessed from the bank a telescopic sampler with a stainless-steel scoop will be used to collect the sample. Where required, a boat will be used to access some locations of the Ross River. The sample will then immediately be transferred into the new laboratory supplied container.
Field Parameters	Temperature, EC, DO, ORP, pH and observations of water quality will be recorded for all surface water samples.
Sampling Schedule	Surface water sampling will be conducted at 31 locations during both the wet and dry season sampling events. Samples collected will depend on the availability of water within the waterway.

4.4.4 Laboratory Analysis and Quality Assurance/Quality Control Sampling

The following QA/QC sampling and laboratory analysis will be conducted for all samples as outlined in the table below.

Table 12 Laboratory Analysis and QA/QC Sampling

Item	Details
QA/QC samples to be collected	Field QA/QC samples are to include intra-laboratory duplicate and inter-laboratory duplicate, trip blank and equipment rinsate blank (rinsate) samples. Duplicate samples are to be collected at a minimum frequency of 1 in 10 primary PFAS samples. Laboratory supplied trip blanks will be included at a rate of one per batch of samples (excluding private property sampling) and will be prepared by filling sample containers with laboratory supplied PFAS free deionised water. Rinsate samples are to be collected at a rate of one sample per day when non-dedicated equipment is used by pouring laboratory supplied PFAS free deionised water over the decontaminated sampling equipment. Additional sample volume is required to be collected to enable the appropriate laboratory QA/QC for all water samples**.**
Sample Analysis	All primary samples will be submitted for PFAS extended suite using the standard levels of detection.

4.4.5 Sample Handling and Transport to Laboratory

AECOM personnel will attempt to reduce heterogeneity in the sample media matrix by dividing the sample collected between primary and inter/intra-laboratory jars or bottles during sampling. All samples will be placed on ice in eskies immediately after sampling.

All samples will be kept, if possible, at or below 4°C during transit to the laboratory. Prior to sampling, assessment of the analytical holding times will be made, and the sampling planned accordingly to help ensure that holding times are not breached or are minimised as far as practicable.

Samples will be transported to the laboratory for analytical testing under standard Chain of Custody (CoC) documentation. Primary and associated duplicate QA/QC samples will be analysed by Australian Laboratory Services (ALS) Brisbane. The inter-laboratory duplicate samples will be analysed by Eurofins Environment Testing Australia Pty Ltd (Eurofins) in Brisbane.

4.5 Calibration

The water quality meter will be calibrated each day of use prior to the commencement of field activities with relevant solutions, including pH, DO, EC and ORP. The calibration will be in accordance with manufacturers' instructions or NATA publication "General Requirements for Registration: Supplementary Requirement: Chemical Testing (NATA 1993) and Technical Note N0. 19 (NATA 1994)". Where satisfactory calibration cannot be achieved, the water quality data will not be used for interpretive purposes.

Calibration details will be recorded on field sheets and included in the Sampling Event Factual Reports.

4.6 Logistics

The laboratory sample containers will be collected from the laboratory prior to the commencement of fieldwork. All primary and duplicate samples will be transported to ALS Townsville by the field team for forwarding to Brisbane. All inter-laboratory duplicate samples will be couriered directly to the secondary laboratory (Eurofins Brisbane) under a separate CoC documentation for analysis.

4.7 Analytical Suite and Laboratory Analysis Methods

4.7.1 Laboratory NATA Accreditation Details

The laboratory is required to use NATA accredited methods based on NEPM, US EPA, Table B 15 of the US Department of Defence/Department of Energy (US DOD/DoE) and American Society for Testing and Materials (ASTM) methods as appropriate.

The primary and secondary laboratories selected for this program are ALS (NATA Accreditation Number 825) and Eurofins (NATA Accreditation Number 1261), respectively.

4.7.2 Analytical Schedule

All media sampled shall be analysed for the extended PFAS suite with standard LOR as outlined in **Table 13** below.

Table 13 Sample Analytical Suite for PFAS

PFAS Group	Compound	CAS No.
Perfluoroalkyl Sulfonic Acids	Perfluorobutane sulfonic acid (PFBS)	375-73-5
	Perfluoropentane sulfonic acid (PFPeS)	2706-91-4
	Perfluorohexane sulfonic acid (PFHxS)	355-46-4
	Perfluoroheptane sulfonic acid (PFHpS)	375-92-8
	Perfluorooctane sulfonic acid (PFOS)	1763-23-1
	Perfluorodecane sulfonic acid (PFDS)	335-77-3
Perfluoroalkyl Carboxylic Acids	Perfluorobutanoic acid (PFBA)	375-22-4
	Perfluoropentanoic acid (PFPeA)	2706-90-3
	Perfluorohexanoic acid (PFHxA)	307-24-4
	Perfluoroheptanoic acid (PFHpA)	375-85-9

PFAS Group	Compound	CAS No.
	Perfluorooctanoic acid (PFOA)	335-67-1
	Perfluorononanoic acid (PFNA)	375-95-1
	Perfluorodecanoic acid (PFDA)	335-76-2
	Perfluoroundecanoic acid (PFUnDA)	2058-94-8
	Perfluorododecanoic acid (PFDoDA)	307-55-1
	Perfluorotridecanoic acid (PFTrDA)	72629-94-8
	Perfluorotetradecanoic acid (PFTeDA)	376-06-7
Perfluoroalkyl Sulfonamides	Perfluorooctane sulphonamide (FOSA)	754-91-6
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2
	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6
(n:2) Fluorotelomer Sulfonic Acids	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4
	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2
	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0

The current standard laboratory limits of reporting (LOR) are described in **Table 14** below.

Table 14 Laboratory Limits of Reporting

Sample Media	Parameter	Technique/Method Reference	LOR*
Groundwater and Surface Water	Extended PFAS Suite	LC/MS-MS	0.01 – 1.0 µg/L
Sediment	Extended PFAS Suite	LC/MS-MS	0.0002 – 0.001 mg/kg

LC/MS-MS = Liquid chromatography–mass spectrometry

*LOR for Australian Laboratory Services (ALS)

4.8 Sample Nomenclature

In order to meet Defence data management requirements, a consistent sample nomenclature has been adopted for the Program. All primary samples will be labelled using the following DCMM naming convention:

PPPP_XX000_YYMMDD

[property ID]_[type of sample][THREE DIGIT sample number]_[yearmonthday]

e.g. 0229_MW001_200401

Location types and codes are prescribed by Defence and the investigation history.

Primary Sample Types/Location Codes relevant to this OMP include:

- MW = monitoring well
- SW = surface water - no depth required
- SD = sediment – no depth required as all sediment samples will be from surface.

QA/QC Samples will be labelled in accordance with the following convention:

- Duplicate: PPPP_QC1XX_YYMMDD
- Triplicate: PPPP_QC2XX_YYMMDD
- Rinsate: PPPP_QC3XX_YYMMDD
- Trip Blank: PPPP_QC5XX_YYMMDD.

4.9 Defence ESdat Requirements

Defence has contracted Earth Science Information Systems (EScIS), to provide contamination data management services through a cloud instance of its ESdat product.

All OMP field and laboratory data collected by AECOM will be uploaded, stored and managed in Defence's ESdat database in accordance with Section 6 of DCMM Annex L (Department of Defence, 2018, amended June 2021). AECOM will refer to historical investigation data to ensure consistent location codes are used to enable analysis of data trends. Where required under Annex L, non-compliant location codes will be resolved under direction from Defence.

AECOM will upload the data from each sampling event into ESdat prior to submitting the Sampling Event Factual Report.

4.10 Adopted Screening Criteria

Adopted screening criteria references national guidance in the form of the PFAS National Environmental Management Plan, Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance.

At the time of preparing this SAQP, a number of guidance documents were in circulation in Australia including:

- PFAS National Environmental Management Plan (NEMP), (HEPA 2020).
- Department of Health (DoH), 2019. Health Based Guidance Values for PFAS for use in site investigations in Australia. April 2017 [updated September 2019] (FSANZ 2017).
- National Health and Medical Research Council (NHMRC), 2019. Guidance on PFAS in Recreational Water. August 2019 (NHMRC 2019).
- National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013 (ASC NEPM).

The adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 15** below.

Table 15 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Off-Base - Drinking Water	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP, 2020 *Off-Base groundwater results will be compared to these criteria. Only surface water results from SW245 will be compared to these criteria. This is the only surface water location within the emergency drinking water supply for Townsville and is upgradient of Blacks Weir and not tidally influenced.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values are from the PFAS NEMP, 2020 *All surface water and groundwater results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater and marine water (95% species protection values)	PFOS	0.13 µg/L	The values are from the PFAS NEMP, 2020 *All surface water and groundwater results will be compared to these criteria.*
	PFOA	220 µg/L	

There are no current HEPA (2020) endorsed guideline values for PFAS in sediment.

4.11 Waste Management

Due to the proposed “no purge” sampling methodology, it is not anticipated that significant volumes of liquid waste would be generated that would require management or disposal.

Wastewater generated will be discharged to ground directly adjacent to the well in grassed areas.

No waste soil will be generated due to the proposed grab sampling approach.

All consumables (i.e. HydraSleeves™, general rubbish) will be bagged and placed in general waste bins for disposal.

4.12 Quality Assurance/Quality Control Sampling

4.12.1 Field Duplicate and Inter-laboratory Duplicate Samples

Field duplicate (intra-laboratory) samples and triplicate (inter-laboratory field duplicates) for PFAS analysis will be collected and analysed at a minimum frequency of 1 in 10 primary samples.

4.12.2 Rinsate Samples

Rinsate samples are to be collected at a rate of one sample per fieldwork day by pouring laboratory supplied deionised water over the decontaminated sampling equipment.

4.12.3 Trip Blank Samples

Trip blank samples, for water, will be supplied by the laboratory and placed in the eskies used to transport the samples at a rate of one per batch of samples delivered to the laboratory. The trip blank samples will be analysed for PFAS to assess if any contaminants have entered the sample containers in transit to the laboratory or within the container itself.

4.13 Fieldwork Documentation

4.13.1 Field Notes

Field notes will be collected electronically and maintained to record all field sampling events and include observations made at each sample location. Field notes will include information specific to the sample media as follows:

- Groundwater gauging and sampling - date and time of gauging, HydraSleeve™ installation and sampling will be recorded at each sampling location.
- Groundwater and surface water samples – comments on the observed characteristics of the sample (e.g. colour, turbidity, odour, sheen) and reported field water quality parameters (pH, EC, DO, ORP, temperature) will be recorded; and
- Sediment and surface water samples - comments on the morphology of the sample location, the depth, flow direction and strength of water flow (if water is present), the water and sediment/soil colour and odour, and the presence of flora and fauna. The soil/sediment types observed at each sample location will be described using the Unified Soil Classification System (USCS).

The coordinates for each sample location will be noted. The location of quality control (e.g. duplicate and inter-laboratory duplicate) sample collection points will also be noted.

AECOM's tablet-based data capture ('EDCA') system will be utilised by field staff to minimise potential data recording errors and allow on-the-spot identification of potentially erroneous data in comparison to historical data.

4.13.2 Sample Labels

AECOM will utilise the tablet-based ALS 'Compass' sample management application to streamline sample labelling and chain of custody (CoC) creation to ensure compliant sample IDs are used in the field.

Sample containers will also be labelled with the sample ID as a failsafe method.

A ball point pen will be used for labelling, to ensure PFAS is not introduced to the samples from permanent markers.

4.13.3 Chain of Custody Forms

A CoC form will be completed, documenting the sample identification number and analytes. The CoC documents the chain of events from sample collection to delivery at the laboratory and provides a traceable account of sample handling. The CoC form will be signed by both the sample collector and the receiving laboratory. The CoC will be generated electronically using the ALS Compass application to reduce potential transcription errors.

The CoC form will include the following information:

- Job number (Note: the name of the Base is not identified for confidentiality purposes);
- Defence ESdat database reference (i.e. QLD_0229_PFASOMP_20);
- Date and time of sample collection;
- Sample ID;
- Type of containers;
- Name of sampler;
- Laboratory to be used;
- Analyses required;
- Any comments; and
- Signatures of the sampler and laboratory receiver.

In the event that additional samples are collected during the field investigations due to observations made by the Field Team, (i.e. samples not proposed in this SAQP), Defence will be provided the rationale for collection of those samples and proposed laboratory analyses. Defence approval will be sought to include these samples on the CoC and to dispatch these samples to the laboratory.

Upon receipt of the original documents accompanying the samples at the laboratory, the laboratory will provide a sample receipt document (noting the temperature of samples upon receipt, analyses required and any non-conformances) and return the signed CoC form to confirm analyses to be performed and the due date for the analytical results.

4.13.4 Sampling Documentation

Field sampling sheets will be completed for each location, and will include the following information (as appropriate for the media being sampled):

- Name of sampler;
- Sample location;
- Date /time of monitoring/ sampling;
- Sampling method;
- Observations of the sampled media; and
- Calibration records.

Records of all equipment calibration will be included in the Sampling Event Factual Reports. Photographs of surface water sampling locations will be taken where permitted.

4.14 Reporting

4.14.1 Sampling Event Factual Report

No later than four weeks following receipt of the laboratory reports, AECOM will prepare and submit a Sampling Event Factual Report to Defence. Each Sampling Event Factual Report will include:

- Details of the scope of monitoring completed;
- A description of the sampling methodologies used;
- A summary of observations made while sampling (e.g. recent weather conditions, any visual or olfactory observations that may indicate impacts to surface water or groundwater, or any estate management works or training activities that may have the potential to impact sampling or data);
- A summary of any changes to the monitoring network condition that may affect data integrity, or require rectification works, and recommendations for repair, replacement of decommissioning of a location;
- A presentation of the analysis results in a table that includes comparisons with PFAS guidelines, highlighting any significant statistical deviations from historical monitoring and investigation data, and identifying any locations with first-time detections of PFOS + PFHxS or PFOA or new exceedances of guideline values;
- A presentation of the relative groundwater levels for the event on a figure with inferred contours and inferred groundwater flow direction (excluding tidally influenced wells);
- Discussion of the analytical data quality, including review of the quality control sampling results and laboratory quality control data; and
- Inclusion of the following information as attachments:
    - Figures;
    - Tables;
    - Sampling logs and forms including field water quality parameter measurements;

- Chain of custody forms;
- Laboratory analytical certificates and QA/QC reports; and
- Equipment calibration certificates.

4.14.2 Ongoing Monitoring Report

At the end of each 12-month monitoring period, AECOM will prepare and submit an Annual Interpretive Report to Defence. Each Interpretive Report will include:

- Evidence of compliance with the requirements of the SAQP and meeting stated objectives of the OMP (Department of Defence, 2020);
- Relevant figures depicting sampling locations and site-specific hydrogeological features;
- Laboratory results and analysis including comparison with relevant screening criteria as identified in the OMP (Department of Defence, 2020);
- Assessment and commentary on appropriate QA/QC procedures;
- A review of the CSM and provision of a revised CSM if required;
- Data interpretation, including trends in groundwater concentration, gradient and flow directions;
- Assessment of statistically based trends that may inform decision making when it comes to the revision of the OMP (Department of Defence, 2020); and
- A statement as to whether the risk profile has changed overall, or for any specific location on the Base or within the Management Area, and a recommendation as to whether this should trigger an OMP and/or PMAP review, or other action.

The report will be prepared in accordance with the latest Defence guidance *PFAS OMP Annual Interpretive Report Guidance* (Version 0.4) issued in October 2022 (Department of Defence, 2022).

4.15 Deviation from OMP

While the scope of works and methodology described in this SAQP are generally consistent with that presented in the OMP (Defence, 2020), deviations as a results of subsequent sampling events may occur as a result of review of recommendations made in the Sampling Event Reports (AECOM, 2021a) (AECOM, 2021b), (AECOM, 2021c) and (AECOM, 2022).

During the October 2020 Dry Season Sampling Event surface water sample location SW150 described in the OMP as being from a tap, could not be located and an appropriate location for sampling was unable to be identified. This location has not been sampled to date and has been removed from the SAQP.

During the April 2022 Sampling Event monitoring well sample locations MW117D and MW117S were damaged by construction works and therefore have been removed from the SAQP.

5.0 References

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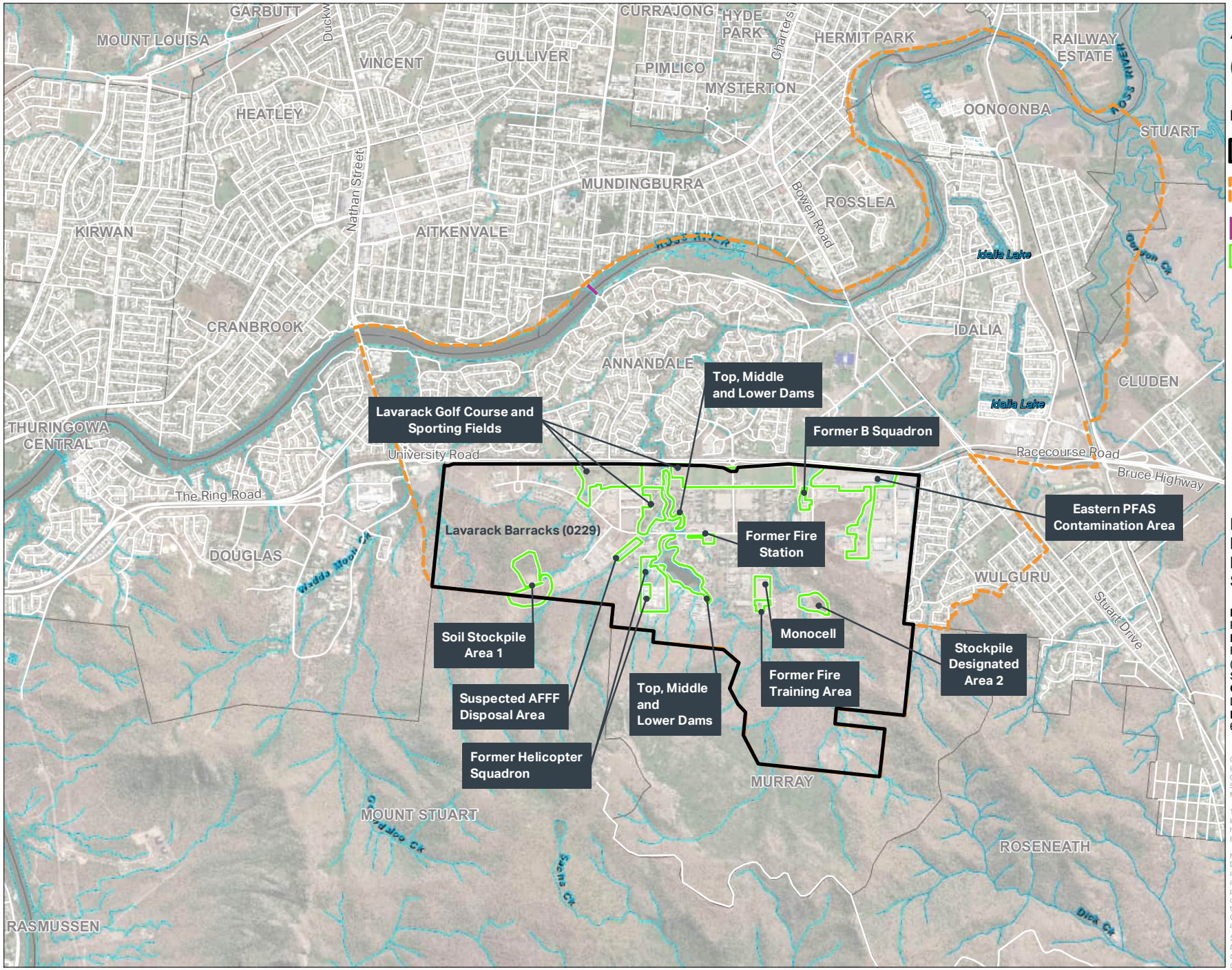
Appendix A

Figures



AECOM

N

0 450 900 m

Legend

- Management Area
- Sub-Management Area Boundary
- Aplin's Weir
- Source Areas
- Major Watercourse
- Minor Watercourse
- Major Culvert
- Minor Culvert

FIGURE 1:
LAVARACK BARRACKS LOCATION AND SOURCE AREAS

PROJECT NAME:
PFAS OMP
REPORT NAME:
PFAS OMP – Lavarack Barracks (0229) Townsville, Sampling and Analysis Quality Plan
CLIENT NAME:
Department of Defence
PROJECT NUMBER:
60612487

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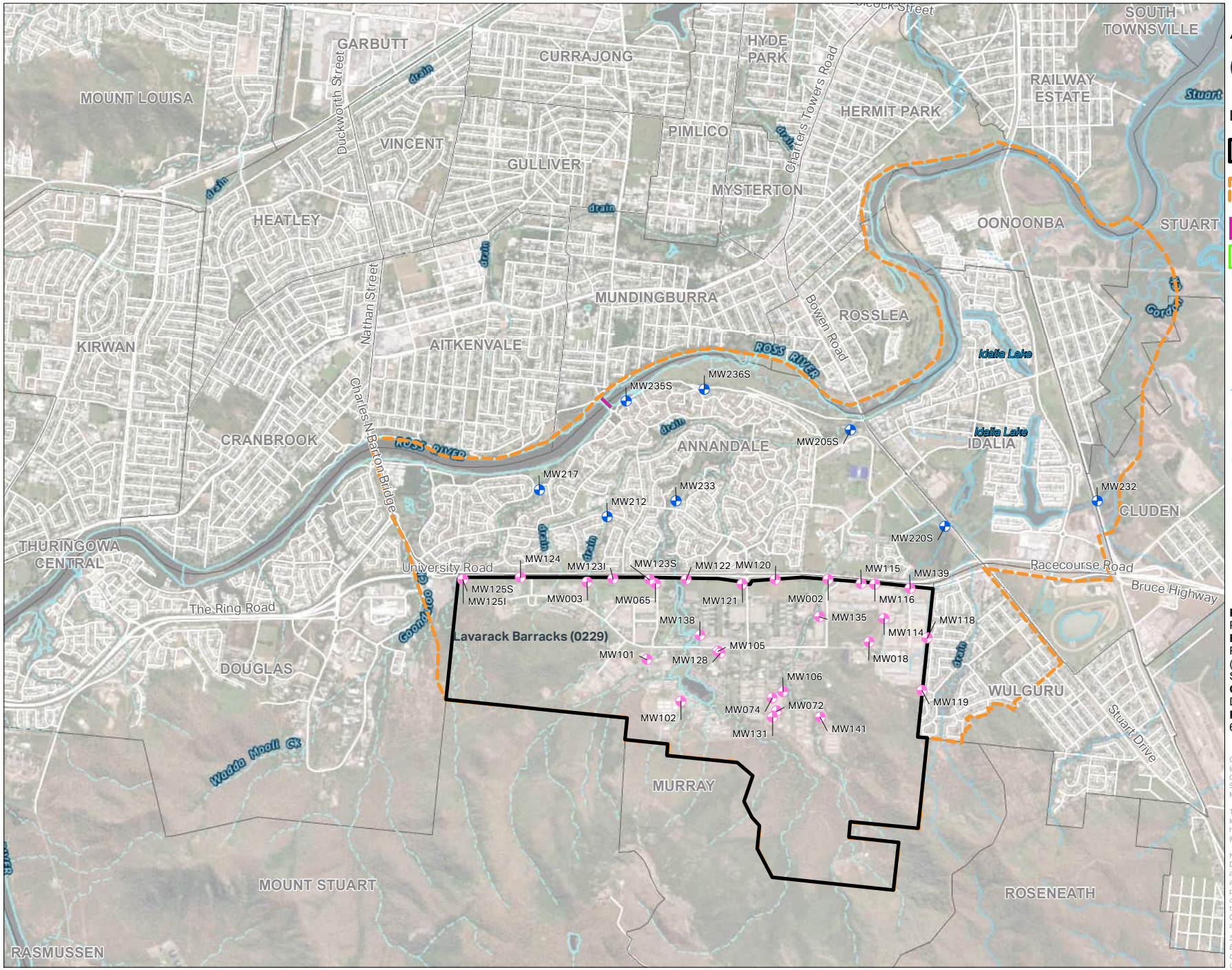

AECOM

N

0 450 900 m

Legend

- Management Area
- Sub-Management Area Boundary
- Aplin's Weir
- Source Areas
- On-base Monitoring Well
- Off-base Monitoring Well
- Major - perennial
- Major - non perennial
- Minor - perennial
- Minor - non perennial

FIGURE 2:
GROUNDWATER SAMPLING LOCATIONS

PROJECT NAME:
PFAS OMP
REPORT NAME:
PFAS OMP – Lavarack Barracks (0229) Townsville,
Sampling and Analysis Quality Plan
CLIENT NAME:
Department of Defence
PROJECT NUMBER:
60612487

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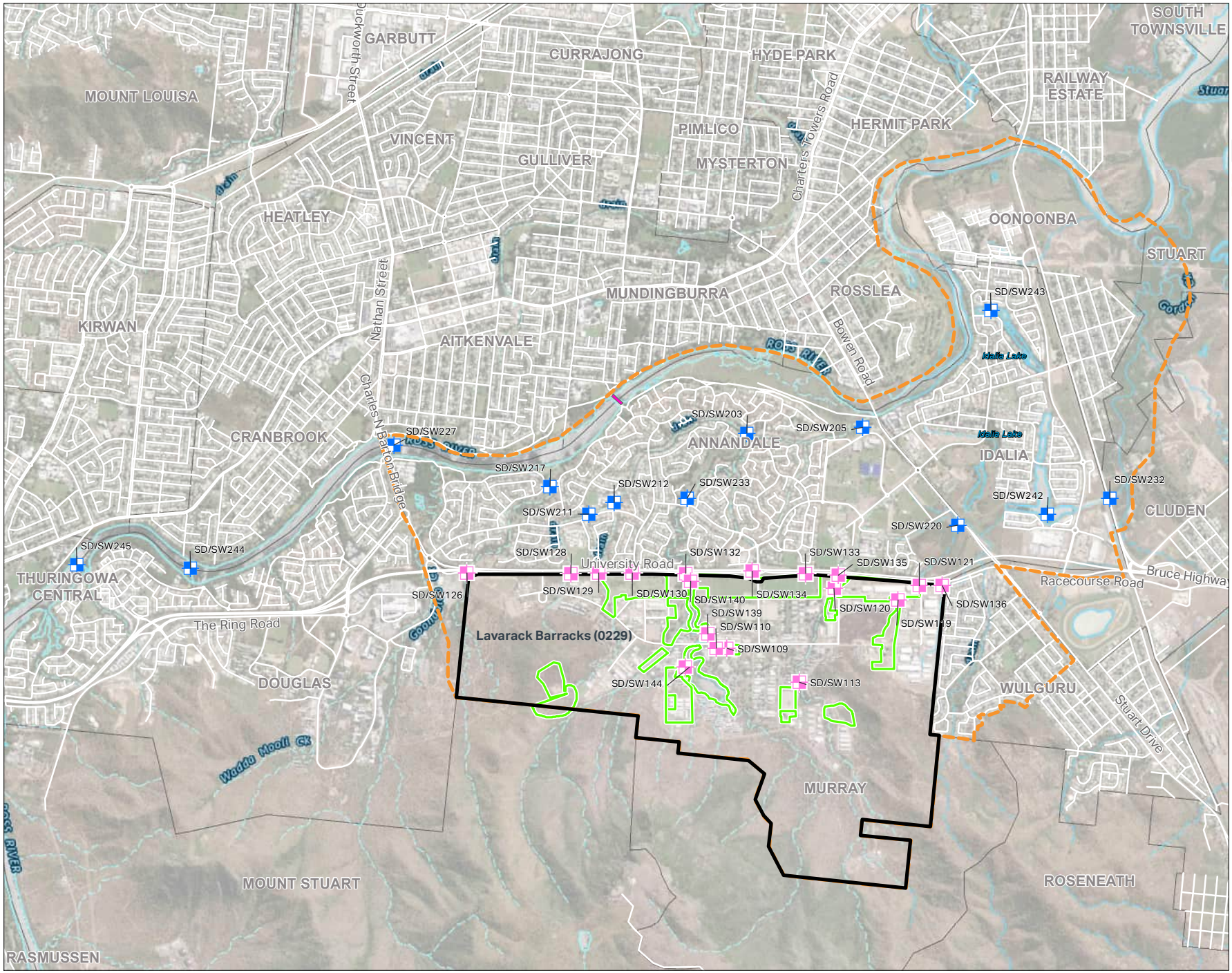

AECOM

N

0 450 900 m

Legend

- Management Area
- Sub-Management Area Boundary
- Aplin's Weir
- Source Areas
- On-base Surface Water/Sediment Sample
- Off-base Surface Water/Sediment Sample
- Major - perennial
- Major - non perennial
- Minor - perennial
- Minor - non perennial

FIGURE 3: CO-LOCATED SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS

PROJECT NAME:
PFAS OMP
REPORT NAME:
PFAS OMP – Lavarack Barracks (0229) Townsville,
Sampling and Analysis Quality Plan
CLIENT NAME:
Department of Defence
PROJECT NUMBER:
60612487

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Appendix B

Lavarack Barracks Management Area

GARBUTT
MOUNT LOUISA
DALRYMPLE ROAD
FULHAM ROAD
NATHAN STREET
VINCENT
CAMBRIDGE STREET
GULLIVER
HUGH STREET
PIMLICO
KINGS ROAD
MYSTERTON
HYDE PARK
QUEENS ROAD
HERMIT PARK
RAILWAY ESTATE
OONOONBA
NORTH COAST LINE RAILWAY
OONOONBA PARK
STUART
ROAD
HEATLEY
ANNE STREET
GULLIVER STREET
BALLS LANE
ROSS RIVER ROAD
MUNDINGBURRA
LOVE LANE
BOWEN ROAD
ROSSLEA
NORTHVIEW LAKE
FRESHWATER LAKE
ABBOTT STREET
GORDON CREEK
STUART CREEK
KIRWAN
CHARLES STREET
AITKENVALE
APLIN'S WEIR
WEIR PARK
CRANBROOK
BAMFORD LANE
IDALIA
SEWAGE TREATMENT PLANT
GORDON CREEK
ANNANDALE
MURRAY SPORTING COMPLEX
FAIRFIELD LAKE
CLUDEN
TOWNSVILLE PALMETUM BOTANIC GARDENS
GLEESON'S WEIR
ROSS RIVER
UNIVERSITY ROAD
RACECOURSE ROAD
RON MCLEAN DRIVE
TOWNSVILLE HOSPITAL
LOWER DAM
LONG TAN ROAD
LACHLAN WILSON DRIVE
BRUCE HIGHWAY
THE RING ROAD
DISCOVERY DRIVE
MIDDLE DAM
ROBERT TOWNS BOULEVARD
WULGURU UNITED FOOTBALL CLUB
STUART DRIVE
DOUGLAS
JAMES COOK DRIVE
TOP DAM
EDISON STREET PARK
WULGURU
WADDA MOOLI CREEK
GOONDALOO CREEK
MURRAY
STUART
MOUNT STUART TRAINING AREA
ROSENEATH
MOUNT STUART

C16094-035 OMP

LEGEND

- Management Area
- Lavarack Barracks Boundary
- Waterway Flow Direction
- Waterway
- Waterbodies
- Locality Boundaries
- Educational Institution
- Commercial and Industrial Areas
- Land for Public Recreation

LOCATION DIAGRAM

Figure 1
Key Features in the Management Area

ISSUE DATE	AUTHOR	QA CHECK	APPROVED		REVISION NOTE
07/02/2020	RL	CC	CC		

C16094_035_OMP_001

DATA SOURCES:
Sample locations - RPS/Wood, 2019
Roads, waterways - Queensland Government, 2019
Basemaps World Topographic and Imagery - Esri Online

rps wood.

N

0 250 500 1,000
Metres

1:28,000 (A3) GDA 1994 MGA Zone 55

Appendix C

Well Construction Details

Appendix C
Well construction details at Lavarack Barracks

MW ID	Screen Interval Depth (mbgl)	Well Installation Depth (mbtoc)
Eastern PFAS Contamination Area		
MW018	Not available in ESdat	9.05
MW114	Not available in ESdat	6.68
MW115	12.7 - 15.7	15.62
MW116	5 - 8	7.88
MW139	2.8 - 5.8	5.76
Former B Squadron		
MW135	3 - 6	6.365
Former Fire Station		
MW105	3 - 6	6.29
MW128	2.6 - 5.6	5.47
Former Fire Training Area		
MW131	5.4 - 8.4	8.7
Former Helicopter Squadron		
MW102	8.5 - 14.5	9.81
Lavarack Golf Course & Sporting Field		
MW065	1.5 - 6	6.5
MW120	4 - 7	7.58
MW121	2.5 - 5.8	6.39
MW122	9.3 - 16.3	16.9
MW123I	5.8 - 8.8	10.11
MW123S	1 - 5	5.6
Monocell		
MW072	Not available in ESdat	7.928
MW074	Not available in ESdat	7.13
MW106	2.5 - 8.5	10.14
Stockpile Designated Area 2		
MW141	Not available in ESdat	8.815
Suspected AFFF Disposal Area		
MW101	5 - 9	6.87
Top, Middle and Lower Dams		
MW138	6 - 9	9.07
Base Boundary		
MW002	Not available in ESdat	5.21
MW003	Not available in ESdat	30.83
MW118	3 - 6	6.02
MW119	5.4 - 10.4	10.41
MW124	3 - 6	7.89
MW125I	5.8 - 8.8	21.92
MW125S	1 - 5	7.71
Off-Base		
MW205S	8 - 11	8.8
MW212	6 - 9	8.86
MW217	3 - 6	5.45
MW220S	2 - 5	6.02
MW226	Not available in ESdat	5.85
MW232	1 - 4	3.03
MW233	4.2 - 7.2	7.56
MW235S	4.1 - 8.1	7.94
MW236S	4 - 7	6.92

Design
for a better
future /

Department of Defence

PFAS Ongoing Monitoring Plan
Lavarack Barracks

Sampling and Analysis Quality Plan

October 2024

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Department of Defence

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Rev	Date	Details
Rev0	29/8/2024	Draft PFAS Ongoing Monitoring Plan, Lavarack Barracks, Sampling, Analysis and Quality Plan
Rev1	13/9/2024	Draft
RevA	1/10/2024	Final

	Name	Date	Signature
Prepared by:	[redacted]	1/10/2024	[redacted]
Reviewed by:	[redacted]	1/10/2024	
Approved by:	[redacted]	1/10/2024	

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Table of contents

Abbreviations iv

1 Introduction 1

1.1 Objectives 1

1.2 Scope of Works 1

1.3 Regulatory and Policy Context 2

1.3.1 Commonwealth Legislation 2

1.3.2 Defence Policy, Standards, and Guidance 2

1.3.3 State/Territory Legislation and Policy 3

2 Site Information 4

2.1 Base Description 4

2.2 Historic PFAS Monitoring 4

2.3 Management Area 4

2.4 Climate 4

2.5 Geology and Hydrogeology 5

2.6 Surface Water Bodies 5

3 Conceptual Site Model 6

3.1 PFAS Sources 6

3.2 PFAS Migration Pathways 6

3.3 PFAS Exposure Pathways 7

3.4 Receptors 7

4 Data Quality Objectives 8

4.1 Data Quality Indicators 9

4.1.1 Relative Percent Difference Calculations 11

4.2 Analytical Laboratories 12

4.2.1 Laboratory Analysis Program 12

4.3 Calibration of Testing and Measuring Equipment 14

4.4 Chain-of-Custody 14

4.5 QA/QC Reporting – Data Validation 14

5 Sampling and Analysis Plan 15

5.1 Sampling Schedule and Sampling Locations 15

5.1.1 Proposed Schedule 15

5.1.2 Groundwater Sample Locations....15
5.1.3 Surface Water Sampling Locations....17
5.1.4 Sediment Sampling Locations....17
5.2 General Field Methods for PFAS Sampling....18
5.2.1 Sample Collection....18
5.2.2 Sample Handling and Labelling....18
5.2.3 Summary of Identified Sources of PFAS Contamination Recommended Alternatives....19
5.3 Groundwater....19
5.3.1 Groundwater Gauging....19
5.3.2 Groundwater Sampling....19
5.4 Surface Water....20
5.5 Sediment....21
5.6 Sample Containers....22
5.7 Sample Naming Convention....22
5.8 Defence ESDAT Requirements....22
5.9 Equipment Decontamination....23
5.10 Waste Management....23
5.11 Field Records....23
6 Adopted Screening Criteria....24
7 Proposed Reporting Framework....25
Bibliography....26

List of tables

Table 4.1 Data Quality Objective Process....8
Table 4.2 Summary of Data Quality Indicators....10
Table 4.3 Summary of Project Quality Acceptance Limits....10
Table 4.4 Sample Analytical Suite for PFAS....12
Table 5.1 Rationale for Groundwater Monitoring Locations....16
Table 5.2 Groundwater Sampling Locations....16
Table 5.3 Surface Water Sampling Locations....17
Table 5.4 Sediment Sampling Locations....17
Table 6.1 PFAS Screening Criteria....24

List of appendices

Appendix A Figures

Abbreviations

AFFF	Aqueous Film Forming Foam
AHD	Australian Height Datum
AS	Australian Standard
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measures, as amended 2013
Base	Lavarack Barracks
COC	Chain of Custody
CSM	Conceptual Site Model
DO	Dissolved Oxygen
DQI	Data Quality Indicators
DQO	Data Quality Objectives
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EPA	Environment Protection Authority (or relevant state/territory jurisdiction)
ERA	Ecological Risk Assessment
HHRA	Human Health Risk Assessment
LOR	Limit of Reporting
Management Area	The geographical area subject to Defence risk management actions. May include private or Defence owned detached properties beyond the Base boundaries.
NATA	National Association of Testing Authorities
Off-Base	Outside the Defence property, but within the Management Area
On-Base	On the Defence property
OMP	Ongoing Monitoring Plan
PFAS	Per- and polyfluoroalkyl Substances
PFAS NEMP	PFAS National Environmental Management Plan
PFHxS	Perfluorohexane sulfonate
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate
PMAP	PFAS Management Area Plan
QA	Quality Assurance
QC	Quality Control

Risk management actions	Remediation and management actions to address potential risks to receptors from PFAS contamination
SAQP	Sampling, Analysis and Quality Plan
Source	A source can be primary or secondary. Primary sources are generally areas where AFFF was used or stored. Secondary sources may be an accumulation of contamination in the environment, such as in soil, sediments, or surface water bodies.
TDS	Total Dissolved Solids

1 Introduction

Department of Defence engaged WSP Australia Pty Ltd (WSP) to prepare a sampling, analysis and quality plan (SAQP) for the ongoing monitoring plan (OMP) for per-and poly-fluoroalkyl substances (PFAS) at the Lavarack Barracks (the Base) and the Lavarack Barracks Management Area located in Townsville, Queensland, as defined in the PFAS Management Area Plan (PMAP; Department of Defence, 2020)[1]. A site locality plan is provided in Figure 1, Appendix A and Base features are provided in Figure 2, Appendix A.

The purpose of the OMP is to undertake ongoing monitoring of PFAS in the On-Base and Off-Base environment and to assess for changes in risks to human and ecological receptors from PFAS originating from the Base. In addition, the data will enable to identify changes to sources, transport pathways and/or receptors and to assess the influence that risk management activities including remediation activities, at the Base, as outlined in the Department of Defence PMAP (2020), have had on PFAS in the environment.

This SAQP has been prepared with reference to the *National Environment Protection (Assessment of Site Contamination) Measures 1999* (NEPM; amended 2013), the Heads of EPAs Australia and New Zealand (HEPA; 2020) *PFAS National Environmental Management Plan* (PFAS NEMP), Defence estate and environmental strategies and Defence PFAS-specific strategies and guidance.

1.1 Objectives

This SAQP has been prepared to provide context, justification, and details of the selected sampling and analysis approach for the OMP specifically for the 2024 dry season sampling event. The SAQP objectives are to:

- Present the proposed scope of works;
- Detail the sampling and analytical methodology for the OMP; and
- Detail the proposed data quality assurance and quality control (QA/QC) measures to be adopted.

1.2 Scope of Works

To meet the OMP objectives, the following scope of works under this SAQP describes the:

- Dry season sampling event in September/October, which includes:
  - Groundwater sampling of 46 groundwater monitoring wells; and
  - Surface water sampling at 31 locations (provided water is present), co-located with sediment sampling.
- Preparation of a sampling event report following each dry season sampling event.

The scope of work to be completed under this SAQP conforms to the previous OMP dry season monitoring program (August 2023) undertaken by AECOM (AECOM, 2023b), with the following changes:

- Inclusion of monitoring wells MW077, MW349, MW14A, MW345, MW111B, MW112, MW019, and MW021. These monitoring wells are a component of the post-remediation monitoring network and were requested by Defence to be included in the OMP.

Sampling locations are presented in Figure 3 (groundwater) and Figure 4 (surface water/sediment), Appendix A.

[1] Department of Defence (2020), *PFAS Management Area Plan, Lavarack Barracks, Townsville*. Revision 5, issued August 2020.

It is noted that the OMP is currently being updated to address this post-dry season monitoring event and future monitoring events, but that this SAQP applies only to the 2024 dry season sampling event. A revised SAQP report will be prepared to reflect any changes to the future dry season or wet season monitoring scope, prior to the commencement of these sampling events.

1.3 Regulatory and Policy Context

Lavarack Barracks is a Department of Defence property subject to Commonwealth Government jurisdiction. The collection and assessment of PFAS data for the OMP will be completed in general accordance with the below outlined legislation, policy, standards, and guidance documents.

1.3.1 Commonwealth Legislation

- Australian and New Zealand Governments (ANZG) 2018, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*;
- *Environmental Protection and Biodiversity Conservation Act 1999;*
- Heads of EPAs Australia and New Zealand (HEPA) 2020, *PFAS National Environmental Management Plan*, Version 2.0;
- *National Environment Protection (Assessment of Site Contamination) Measures 1999* (NEPM; amended 2013);
- National Health and Medical Research Council (NHMRC), National Resources Management Ministerial Council (NRMMC) 2011, (Version 3.8, updated September 2022) *Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy*;
- NHMRC 2019, *Guidance on Per and Polyfluoroalkyl substances (PFAS) in Recreational Water*;
- Standards Australia 1998a, *Water Quality—Sampling. Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples (AS/NZS 5667.1:1998)*;
- Standards Australia 1998b, *Water Quality—Sampling. Part 4: Guidance on sampling from lakes, natural and man-made (AS/NZS 5667.4:1998)*;
- Standards Australia 1998c, *Water Quality—Sampling. Part 11: Guidance on sampling of groundwaters (AS/NZS 5667.11:1998)*; and
- Standards Australia 1998d. *Water Quality—Sampling. Part 12: Guidance on sampling of bottom sediments (AS/NZS 5667.12:1998)*.

1.3.2 Defence Policy, Standards, and Guidance

- Defence Environmental Policy;
- Defence Estate Strategy 2016-2036;
- Defence Environmental Strategy 2016-2036;
- Defence Contamination Management Manual Annex L Guidance on Data Management 2018 (amended June 2021);
- Defence PFAS Construction and Maintenance Framework Version 2.1 2019;
- Lavarack Barracks, Townsville PFAS Management Area Plan 2020;
- Defence Guidance – Ongoing Monitoring Program Reporting 2024; and
- Defence Guidance – PMAP & OMP Revision Process 2024.
- Defence Template – PFAS Ongoing Monitoring Plan 2023

1.3.3 State/Territory Legislation and Policy

The following state legislation and policy does not have jurisdiction on the Base, although may be applied when potential environmental harm may occur to Off-Base environments and receptors:

- *Environmental Protection Act 1994 (QLD)*;
- *Environmental Protection Regulation 2019 (QLD)*; and
- *Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (QLD).*

2 Site Information

2.1 Base Description

The Base is located in Townsville, North Queensland and covers an area of approximately 740 hectares (ha) (Figure 1 and Figure 2, Appendix A). The Base consists of a working, training, and accommodation facility, which houses the Australian Army 3rd and 11th Brigades and supporting organisations. Activities carried out at the Base are mainly related to general Defence training activities, and vehicle maintenance works including wash-down bays, interceptor pits, and battery storage areas. The Base also contains numerous workshops and bulk fuel area/oil storage and distribution facilities, including a former Mobil Service Station (Department of Defence PMAP, 2020). Former Lavarack golf course and sporting fields are located along the northern boundary of the Base.

2.2 Historic PFAS Monitoring

An OMP has been undertaken at groundwater, surface water and sediment monitoring locations within and downgradient of the Lavarack Barracks on a bi-annual basis in accordance with the PMAP, since October 2020. The sampling associated with the OMP included one wet season and one dry season sampling event per calendar year. The data and findings of these previous PFAS sampling events are presented and discussed in the Ongoing Monitoring Interpretive Report (October 2020 – March 2023), Lavarack Barracks, Townsville (AECOM, 2023a).

2.3 Management Area

The PFAS Management Area includes the Base (On-Base area) and the surrounding residential suburbs of Murray, Douglas, Annandale, Idalia, Oonoonba, and Wulguru (Off-Base area) (Department of Defence PMAP, 2020), and covers a surface area of 2,365 ha. The Management Area boundary is formed by Ross River to the north, the relevant sub-catchment boundaries to the east and west, and the southern Base boundary to the south (refer to Figure 2, Appendix A).

Ross River and its tributaries are considered key ecological receptors within the Management Area. The area north of the Base mainly consists of low-density residential properties. In addition, schools, public recreational areas, commercial and light industrial properties are also located within the Management Area. The following are considered sensitive human health receptors within the On-Base and Off-Base areas:

- Residents of the Base, and the low-density residential properties within the Management Area;
- Workers and visitors to the Base and the commercial/industrial properties in the vicinity; and
- Users of groundwater and surface water for recreational activities, consumption, and fish (and other biota) harvesting.

2.4 Climate

The Management Area is located in Townsville, which is within the dry tropics region of Queensland. Townsville's climate is dominated by a wet season (November to April) and dry season (May to October). The wet season is typically hot and humid, with a long-term maximum average temperature of 30.9 Degrees Celsius (°C) and a minimum average temperature of 23.2°C (BoM, 2024). Dry seasons are generally warm with a long-term maximum average temperature of 27°C and a minimum average temperature of 16.5°C (BoM, 2024). Townsville's average yearly rainfall is 1,135.8 millimetres (mm) with contrasting wet and dry season averages (wet season: 1,018.1 mm [89.6%]; dry season average: 118.4 mm [10.4%]), which falls on a total of 65 days per year (BoM, 2019a). The average annual rainfall at the Base is 1,132.8 mm, with the mean minimum rainfall of 10.1 mm in September and the mean maximum rainfall of 301.9 mm in

February (BOM, 2024). Rainfall is variable year to year, with the potential for high rainfall periods to cause localised flooding during the wet season.

2.5 Geology and Hydrogeology

The topography of the Management Area is characterised by a hillslope profile descending from the Mount Stuart massif to the south towards the Ross River floodplain terraces. The Management Area is characterised by coastal floodplain sediments (in the northern Management Area) and colluvial hillslope soils (in the southern Management Area) over igneous granitic bedrock. The underlying bedrock consists predominantly of Carboniferous volcanics and Permian intrusions.

Shallow groundwater is present within the alluvial sediments of the Ross River floodplain and likely recharged by the network of inflowing freshwater tributaries, direct infiltration from rainfall in the catchment, and baseflow from rainfall on the surrounding granitic outcrop and associated colluvium.

A groundwater bore search (https://qldglobe.information.qld.gov.au/) was conducted in July 2024 for the Management Area and 108 registered existing groundwater bores were identified. These bores are registered for domestic (50), irrigation (6), monitoring (31), test (4), commercial school (1), lake top up (1), and unknown (15) purposes.

2.6 Surface Water Bodies

The Base is located at the foot of Mount Stuart with regional topography influencing ground and surface water flows in a northerly and north-easterly direction towards Ross River. A dam is located in the central portion of the Base, which is divided into three sections namely the upper, middle, and lower dams, and several creeks, which are tributaries of Ross River, flow through the Base.

The intensity of the pronounced wet season has a substantial bearing on the shallow geology and hydrogeology as well as the surface water and groundwater flow regimes across the Management Area. Many of the watercourses (and drains) that flow through the On-Base and Off-Base areas are ephemeral, with little to no water (ponded or flowing) present during the dry season. Surface water is generally limited to permanent waterbodies in the On-Base and Off-Base areas (e.g., Lavarack Dams, lakes present in Idalia) and Ross River.

3 Conceptual Site Model

A conceptual site model (CSM) is a representation or overall picture of the Management Area that shows the possible relationships between a contaminant source, migrations and exposure pathways, and receptors. This is known as the source-pathway-receptor (SPR) model. For a potential risk to be present, all three of the following components must exist:

- a potential source of contamination;
- a receptor that could be adversely affected by the contaminants (such as people, or an ecosystem); and
- a pathway that allows the receptor to be exposed to, or affected by, the contaminant (e.g. contaminated groundwater ingestion or contaminated vapour inhalation).

A simplified conceptual site model for the Management Area is provided in Section 3 of the Lavarack Barracks OMP. A summary of PFAS sources, migration and exposure pathways, and receptors follows.

3.1 PFAS Sources

High priority source areas identified at the Base are the former fire station, former fire training area, and Monocell (Department of Defence PMAP, 2020). In addition, other known and potential primary and secondary sources of PFAS at the Base consist of the following (refer to Figure 2, Appendix A for locations):

- Soil Stockpile Area 1
- Suspected aqueous film-forming foams (AFFF) Disposal Area
- Former Helicopter Squadron
- Eastern PFAS Contamination Area
- Former B Squadron
- Stockpile Designated Area 2
- Lavarack Golf Course and Sporting Fields
- Top, Middle, and Lower Dams

It is acknowledged that the source areas identified within the OMP are likely to require revision based on the update of the Site Review Assessment (SRA) and PMAP. These revisions will be reflected in the updated OMP and revised SAQP documents following the 2024 dry season sampling event.

3.2 PFAS Migration Pathways

PFAS impacts to the Management Area from On-Base source locations may result via the following migration pathways:

- leaching of PFAS from soil or concrete via rainfall or water;
- transport of soil in runoff water;
- downward vertical migration of impacted water into groundwater;
- lateral migration of impacted groundwater;
- transport of soil/sediment or water in drainage lines or surface water bodies;
- bioaccumulation in plants and lower order species due to direct contact with PFAS in the environment; and

— biomagnification in the food-web via the consumption of contaminated lower order species.

The PFAS migration pathways in the Management Area will be reviewed and refined as necessary in the updated OMP.

3.3 PFAS Exposure Pathways

Exposure pathways for receptors in the Management Area identified in Section 3.3 to PFAS are:

— direct contact with or incidental ingestion of impacted surface water or sediment by On-Base and Off-Base residents, visitors, users of the Off-Base properties or maintenance workers;

— uptake of PFAS from surface water or groundwater by plants;

— ingestion of or direct contact with contaminated water by terrestrial or aquatic animals;

— ingestion of impacted plants by grazing animals, with the potential for biomagnification; and

— ingestion of impacted animals by carnivorous animals, with the potential for biomagnification.

A detailed description of the PFAS exposure pathways in the Management Area is provided in the HHRA (RPS/Wood 2019) and the ERA (RPS/Wood 2020).

The PFAS exposure pathways in the Management Area will be reviewed and refined as necessary in the updated OMP.

3.4 Receptors

The potential receptors for PFAS in the Management Area from the Base as identified in the HHRA (RPS/Wood 2019) and the ERA (RPS/Wood 2020) are:

Human Health

— On-Base workers conducting intrusive excavations within the Former Fire Station. These exposure risks were found to be suitable for management under existing WHS systems.

— Recreational fishers within Ross River and lakes in Idalia, who consume greater than three (3) meals per week of fish caught from contaminated sources.

— Residents within the Management Area consuming homegrown produce (including leafy greens, tuberous roots, eggs, and poultry) irrigated with PFAS-contaminated groundwater drawn from residential garden bores.

Ecological

— Moderately to slightly disturbed aquatic systems including aquatic plants, aquatic invertebrates, fish, birds, mammals.

The PFAS source-pathway-receptor linkages will be reviewed and updated as necessary in the updated OMP. Updated linkages will consider additional source areas and remediated source areas, and differentiate between pathways to human receptors and ecological receptors. These updates will be reflected in the SAQP for sampling events beyond the 2024 dry season sampling event.

4 Data Quality Objectives

Systematic planning is critical to successful implementation of an environmental assessment and is used to define the type, quantity and quality of data needed to inform decisions. The United States Environmental Protection Agency has defined a process for establishing data quality objectives (DQOs), which is referenced in the NEPM (1999, amended 2013). DQOs are to:

— Set the study objectives;

— Identify appropriate types of data are collected (based on contemporary land use and chemicals of concern); and

— Set the tolerance levels for potential decision-making errors.

The DQO process is a seven-step iterative planning approach. The outputs of the DQO process are qualitative and quantitative statements, which are developed in the first six steps. They define the purpose of the data collection effort, clarify what the data should represent to satisfy this purpose, and specify the performance requirements for the quality of information to be obtained from the data. The output from the first six steps is then used in the seventh step to develop the data collection design that meets the performance criteria and other design requirements and constraints. The DQO process adopted for the monitoring program is outlined in Table 4.1.

Table 4.1 Data Quality Objective Process

Step	Description	Outcomes
1	State the problem	The site has historically been used as a Defence Base and includes a fire station and a fire training centre, which are understood to have included the use of AFFF during training activities. PFAS has historically been identified in soil, surface water, sediment and groundwater at the Base and its surroundings. Understanding the spatial and temporal distribution of PFAS in the surface water, sediment and groundwater, will allow Defence to inform risk management requirements to protect human health and the environment through the implementation of the PMAP program.
2	Identify the decisions/goal	The monitoring goals are to collect groundwater, surface water, and sediment quality data to: — evaluate the nature and extent (spatial and temporal) of PFAS impact in groundwater and surface water pathways associated with Base sources of PFAS derived from AFFF. — monitor the migration of PFAS in groundwater and surface water from the Base. These monitoring data will be used to: — contribute to the current understanding of human health and ecological exposure risk. — assess the effectiveness of PFAS management and mitigation actions originating from the PMAP.
3	Identify the inputs	The inputs required to make the above decisions are as follows: — understanding of the existing geological and hydrogeological data; — available previous investigation and OMP monitoring results, site information and information from publicly available databases and government websites, such as meteorological data; — field observations; — laboratory analytical data for PFAS in groundwater, surface water, and sediment collected On-Base and Off-Base; — guidance from the HHRA and ERA based on exposure risk concentrations / thresholds and assumptions; and — assessment criteria for the media assessed.

Step	Description	Outcomes
4	Define the boundaries of the study	The PFAS Management Area considered in this OMP includes the Base and the surrounding residential suburbs as described in the PMAP for the site (refer to Figure 2, Appendix A for the boundaries). The vertical limits of the OMP will extend to the maximum depth of groundwater monitoring wells. The temporal boundaries will be from the date of the available historical data to the final sampling date for the assessment.
5	Develop a decision rule	The purpose of this step is to define the parameters of interest, specify the action levels, and combine the outputs of the previous DQO steps into an 'if…then…' decision rule that defines the conditions that would cause the decision maker to choose response actions. The decision rules and consequent response actions, where required, are currently being updated for the updated OMP. These decision rules will be reflective of HHRA and ERA exposure point concentrations and thresholds, and assumptions. Data collected as part of the 2024 dry season sampling event will be compared to these updated decision rules and where necessary, response actions undertaken.
6	Specify performance or acceptance criteria	The acceptable limits on decision errors to be applied in the monitoring program and the manner of addressing possible decision errors have been developed based on the data quality indicators (DQIs) of precision, accuracy, representativeness, comparability and completeness and are presented in Table 4.2 and Table 4.3.
7	Develop the plan for obtaining data	The purpose of this step is to identify a resource-effective data collection design for generating data that satisfies the DQOs. This OMP has been designed considering the information and data obtained during the review of available site information and the Department of Defence PMAP (2020). The resource effective data collection design that is expected to satisfy the DQOs is described in detail in the following sections. To ensure the design satisfies the DQOs, DQIs (for accuracy, comparability, completeness, precision and reproducibility) have been established to set acceptance limits on field methods and laboratory data collected and are presented in Table 4.2 and Table 4.3.

4.1 Data Quality Indicators

DQIs for sampling techniques and laboratory analyses of collected samples define the acceptable level of error required for this assessment. The adopted field methodologies and data obtained have been assessed by reference to DQIs based on the PARCC parameters, as follows:

- **Precision** – A measure of the repeatability of results by the laboratory. This is assessed through the analysis of duplicates both internally and externally and is calculated by using relative percentage differences (RPDs).
- **Accuracy** – A measure of the closeness of the results to the actual results. Accuracy is assessed through the comparison of results produced by the primary and secondary laboratories for the same sample and by measuring the extent to which an analytical result reflects the known concentration as measured by the recovery obtained from internal laboratory spikes.
- **Representativeness** - The confidence (expressed qualitatively) that data are representative of each media present.
- **Comparability** - The confidence (expressed qualitatively) that data may be considered equivalent for each sampling and analytical event.
- **Completeness** – The percentage of acceptable data obtained compared to the amount of data needed to achieve a particular level of confidence in the results.

The quantitative and qualitative measures/criteria employed to enable application of the DQI parameters are described in Table 4.2, below.

Table 4.2 Summary of Data Quality Indicators

DQI	Field & Laboratory DQI Considerations
Representativeness	Appropriate media sampled according to OMP, and media identified in OMP sampled and analysed. Samples analysed using same laboratory procedures and within appropriate holding times. Appropriate collection, handling, storage, and preservation used. Potential for change in sample before analysis may decrease representativeness.
Comparability	Same approach to sampling by use of standard procedures on each occasion, use of qualified samplers, same types of sampling equipment used, same types of samples collected, same analytical methods used, same sample LORs, same laboratories, same units, same laboratory methods, and appropriate sample integrity. The laboratories used are required to be National Association of Testing Authorities (NATA) accredited and the methods used are required to be NATA endorsed for the analyses undertaken.
Precision	This is assessed through compliance with standard procedures by collection of field duplicates, analysis of primary and secondary laboratory field duplicates, analysis of laboratory duplicates.
Accuracy	This is assessed through compliance with standard procedures and analysis of field blanks, rinsates, reagent blanks, method blanks, surrogate spikes, reference materials, laboratory control samples, and laboratory-prepared spiked control samples. Different matrix effects can affect the recoveries of some analytes and therefore recoveries that fall outside this range may still be acceptable. Accuracy is assessed through the comparison of results produced by the primary and secondary laboratories for the same sample and by measuring the extent to which an analytical result reflects the known concentration as measured by the recovery obtained from internal laboratory spikes.
Completeness	All critical locations sampled, all samples collected, appropriate standard procedures used and complied with, use of experienced samplers, and documentation correct. All critical samples and analytes analysed according to OMP, use of appropriate laboratory methods and LORs, sample documentation complete, sample holding times in compliance. Acceptable data are obtained when samples are collected and analysed in accordance with the quality control procedures and the DQIs.

Acceptance limits set to quantitatively assess DQIs are in accordance with NEPM (NEPC, 1999 amended 2013) and Standards Australia (AS 4482.1–2005 and AS5567.1-1998) as outlined in Table 4.3.

Table 4.3 Summary of Project Quality Acceptance Limits

DQI	DQI Indicator	Acceptance Limit
Representativeness	-	Generally, there is no quantifiable acceptance limit for representativeness.
Comparability	LORs	Preferably below acceptance criteria
Precision	Field Duplicates (Inter-laboratory and Intra-laboratory duplicates)	Duplicates will be collected at a rate of 1 in 10 (i.e., 1 sample in every 10 samples is analysed by the primary laboratory and 1 sample in 10 is analysed by the second laboratory). Acceptance limits: — >10 x LOR – 20% RPD — <10 x LOR – 40% RPD

DQI	DQI Indicator	Acceptance Limit
Accuracy	Field Method Blanks	Field method blanks will be collected of laboratory-supplied deionised water at a rate of 1 per batch of deionised water to confirm the water being used is PFAS-free. Results should be below LORs.
	Rinsate Blanks	Rinsates will be collected at a rate of at least one for every 10 primary samples but analysed at a rate of 1 per day. Results should be below LORs.
	Trip Blanks	Submitted with each shipment of water samples to the laboratory and analysed as considered required. Trip blanks should be supplied by the laboratory (PFAS-free water in the same container used for the samples). Trip blanks are ordered from the laboratory and accompany the bottle order to site and the sample shipment from site. The trip blank remains in the cooler in the field for the duration of the sampling program. Results should be below LORs.
	Laboratory Method Blanks	Results should be below LORs.
	Laboratory Control Sample Spikes (LCS)	Analysed at a frequency of 10% of total samples analysed by the laboratory. Recoveries for most analytes should generally be within the range of 70% to 130%. This spike refers to a certified reference material or an independently prepared interference free matrix spiked with target analytes.
	Matrix Spikes	Analysed at a frequency of 10% of total samples analysed by the laboratory. Recoveries for most analytes should generally be within the range of 70% to 130%. Different matrix effects can affect the recoveries of some analytes and therefore recoveries that fall outside this range may still be acceptable. Matrix spikes refer to an intra-laboratory split sample, spiked with a representative set of target analytes. This spike monitors potential matrix effects on analyte recoveries.
	Surrogates	Surrogates are added or analysed with each batch of samples and recoveries should be within acceptable laboratory limits.
Completeness	Overall Completeness	95% of usable data is achieved from a data collection activity.

4.1.1 Relative Percent Difference Calculations

The Primary (intra-laboratory) and Secondary (inter-laboratory) duplicates are duplicate samples of the primary sample collected during sampling. The primary duplicates are labelled differently to the primary sample, and both are submitted to the primary laboratory for analysis. The secondary duplicate is sent to the quality control laboratory (secondary or 'check' laboratory) for analysis to compare the results obtained between the two laboratories.

The primary and secondary duplicate results are compared with primary sample results using RPDs. RPDs are calculated according to the following formula:

$$\text{RPD} = \left|\frac{A - B}{A + B}\right| \times 200$$

Where A is the concentration of the primary laboratory result per analyte and B is the corresponding duplicate result.

RPD values can range from 0% (indicating perfect correlation between results) to 200% (indicating complete divergence in results).

In calculating RPD values, the following protocol types will be adopted according to the circumstance.

- **Type 1:** Where the two laboratories have reported levels below their LORs, a RPD of <50% will be assigned in the table.
- **Type 2A:** Where one laboratory has reported a value below a LOR and the other has identified detectable contaminant concentrations, a RPD will be calculated. This will be achieved using the LOR for the undetected sample, and comparing that to the concentration of the detected sample.
- **Type 2B:** Similar to Type 2A RPDs, except that the primary and secondary laboratories have different LORs and a reported value from one laboratory may be below a LOR from the other and may result in an elevated RPD.
- **Type 3:** Where both laboratories report detectable amounts of contaminant, a RPD will be calculated.

4.2 Analytical Laboratories

The laboratories used for sample analysis will be NATA registered and hold NATA accreditation for the analyses of PFAS (i.e., the 'extended PFAS suite'). A primary laboratory will be utilised for analysis of the largest number of samples whilst the secondary laboratory will be utilised for check analyses. Each laboratory will perform its own QA/QC program including duplicates, spikes, blanks and surrogates for organic analyses.

4.2.1 Laboratory Analysis Program

Each media type sampled shall be analysed for the extended PFAS suite with standard LOR as outlined in Table 4.4 below. The adopted PFAS LORs for the project are presented in Table 4.4. Consistent with the previous OMP, no ultra-trace analysis for PFAS in water (surface water or groundwater) is proposed.

Table 4.4 Sample Analytical Suite for PFAS

Target Analytes	Water		Sediment	
	Units	LOR	Units	LOR
Perfluoroalkyl Sulfonic Acids				
Perfluoropropane sulfonic acid (PFPrS)	µg/L	0.02	mg/kg	0.0005
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	mg/kg	0.0002
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	mg/kg	0.0002
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	mg/kg	0.0002
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	mg/kg	0.0002
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	mg/kg	0.0002
Perfluorononane sulfonic acid (PFNS)	µg/L	0.02	mg/kg	0.0002

Target Analytes	Water		Sediment	
	Units	LOR	Units	LOR
Perfluorodecane sulfonic acid (PFDS)	µg/L	0.02	mg/kg	0.0002
Perfluoroalkyl Carboxylic Acids				
Perfluorobutanoic acid (PFBA)	µg/L	0.1	mg/kg	0.001
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	mg/kg	0.0002
Perfluorohexanoic acid (PFHxA)	µg/L	0.02	mg/kg	0.0002
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	mg/kg	0.0002
Perfluorooctanoic acid (PFOA)	µg/L	0.01	mg/kg	0.0002
Perfluorononanoic acid (PFNA)	µg/L	0.02	mg/kg	0.0002
Perfluorodecanoic acid (PFDA)	µg/L	0.02	mg/kg	0.0002
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	mg/kg	0.0002
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	mg/kg	0.0002
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	mg/kg	0.0002
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	mg/kg	0.0005
Perfluoroalkyl Sulfonamides				
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	mg/kg	0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	mg/kg	0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	mg/kg	0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	mg/kg	0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	mg/kg	0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	mg/kg	0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	mg/kg	0.0002
(n:2) Fluorotelomer Sulfonic Acids				
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05	mg/kg	0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.05	mg/kg	0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05	mg/kg	0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	mg/kg	0.0005
PFAS Sums				
Sum of PFAS	µg/L	0.01	mg/kg	0.0002
Sum of PFHxS and PFOS	µg/L	0.01	mg/kg	0.0002
Sum of PFAS (WA DER List)	µg/L	0.01	mg/kg	0.0002

4.3 Calibration of Testing and Measuring Equipment

All testing and measuring equipment used during field investigations will be maintained, verified, and calibrated. Equipment will be fit for purpose being free of defects, perform and function as designed in its current condition, with a current calibration certificate if required.

Field equipment calibration will be checked once per day and every time it is deemed necessary, with re-calibration being undertaken if needed. Calibration performed by equipment hire companies or WSP will be retained and included in the sampling event factual reports.

4.4 Chain-of-Custody

Standard chain-of-custody (COC) procedures will be used for each set of samples. A minimum of one COC will be provided for each laboratory. Samples will be delivered to the laboratory at the most practicable time following collection. Samples will be shipped cold and on ice.

4.5 QA/QC Reporting – Data Validation

QA/QC reviews will be performed at key points during the program. These reviews and reports will assess QC results against the DQOs and DQIs prescribed above to validate that the data are suitable for the monitoring purposes. When the DQIs are not achieved for a particular sample, data qualifiers outlining the nature of the quality problem will be highlighted. The extent of non-conformance of affected parameters and the likely impact of non-conformance on the results of the testing program will be assessed, reviewed and, where possible, steps taken to rectify the issue. The QA/QC report will also consider the sample preservation techniques and approved holding times. Sample preservation, containers, and holding times will be in accordance with relevant guidelines.

5 Sampling and Analysis Plan

The methods used and quality of fieldwork performed during the environmental services and investigation works shall be consistent with sampling procedures outlined in NEPM (1999 amended 2013) and PFAS NEMP (HEPA, 2020) to provide the required level of confidence in the quality of the environmental data collected during the assessment. Field work will be undertaken by a competent field scientist/engineer and will be completed in general accordance with the WSP technical procedures and sampling protocols. A proposed schedule for the investigations in the Management Area over the next 18 months and the specific locations for groundwater, surface water quality, and sediment quality sampling are described in Section 5.1.

General considerations for the field investigation methods for the collection of samples for PFAS analyses are discussed in Section 5.2. Sections 5.3 to 5.5 outline the specific investigation methods required for the collection of field data and samples from groundwater, surface water, and sediment.

5.1 Sampling Schedule and Sampling Locations

5.1.1 Proposed Schedule

For this SAQP, groundwater, surface water, and sediment dry season sampling across the Management Area in 2024 will be completed in September/October. It is noted that the updated OMP will include this dry season sampling event and future sampling events to the end of 2025.

The following sections apply to groundwater, surface water, and sediment sampling locations only for the 2024 dry season sampling event.

5.1.2 Groundwater Sample Locations

There were 38 groundwater monitoring wells sampled as part of the previous OMP dry season monitoring program (August 2023) undertaken by AECOM (AECOM, 2023b). The scope of work proposed for the 2024 dry season monitoring event conforms to the 2023 OMP dry season sampling event, with the following change:

— Inclusion of monitoring wells MW077, MW349, MW14A, MW345, MW111B, MW112, MW019, and MW021. These monitoring wells are a component of the post-remediation monitoring network and were requested by Defence to be included in the OMP.

Accounting for these changes to the previous dry season sampling event monitoring scope, a total of 46 groundwater monitoring wells are proposed for monitoring as part of the 2024 dry season OMP monitoring event. The rationale for selected groundwater monitoring locations was based on providing consistency with previous data sets to allow the monitoring of changes and trends in groundwater PFAS concentrations over time, and to collect pre-remediation data from the proposed post-remediation monitoring network, in accordance with Defence's request.

It is noted that the subsequent sampling events after this dry season event will conform to any updates to the groundwater monitoring locations and their frequency as detailed in the updated OMP. The groundwater monitoring locations in the updated OMP will be derived following consideration of the need to include additional monitoring wells associated with, but not limited to, mass flux transect wells, monitoring wells within Catchment K (including those within proposed for installation within Petroleum Platoon compound), and the monitoring wells within Former Fire Station Remediation Areas.

Groundwater monitoring wells as listed in this SAQP are located across the Base, Base boundary, and Off-Base (which includes Townsville City Council controlled public spaces, and one location on a private property [i.e., MW226]) areas. Permission to access some sampling locations at the Base boundary and on private property for the OMP is required:

— Stakeholder permission is required to access the private property and sample MW226.

— Stakeholder access permission in the form of a Training Area Safety and Management Information System booking with Mount Stuart Training Area Range Control is required for access to MW124, MW125I, and MW125S.

— No formal permits are required for collection of environmental samples under this OMP.

The rationale for the monitoring well selection for each area is summarised in Table 5.1.

Table 5.1 Rationale for Groundwater Monitoring Locations

Area	Rationale
On-Base	Sampling points have been selected both within and down-gradient of the identified PFAS source areas on the Base, to monitor the change in PFAS concentrations at each source area and confirm the level of risk identified in previous investigations.
Base Boundary	The Base boundary sampling points act as 'sentinels' for potential changes in PFAS concentrations in groundwater in the Off-Base Area. These points are considered critical to the understanding of risk to sensitive receptors in the Off-Base Management Area.
Off-Base	Sampling locations within the Off-Base Area have been selected to assess the key PFAS migration pathways and to confirm the understanding of Off-Base risk and provide additional data points for use in determining the seasonal and longer-term trends in PFAS migration via pathways identified during in previous investigations.

The groundwater locations to be monitored as part of the wet and dry season sampling events are provided in Table 5.2 and presented in Figure 3, Appendix A.

Table 5.2 Groundwater Sampling Locations

Investigation/Source Area	Well ID	Number of Wells
Eastern PFAS Contamination Area	MW012, MW018, MW019, MW111B, MW112, MW114, MW115, MW116, MW139	9
Former B Squadron	MW135	1
Former Fire Station	MW105, MW128/MW126[2], MW345	3
Former Fire Training Area	MW131	1
Former Helicopter Squadron	MW102	1
Lavarack Golf Course & Sporting Field	MW065, MW120, MW121, MW122, MW123S, MW123I	6
Monocell	MW014A, MW072, MW074, MW077, MW106, MW349	6
Stockpile Designated Area 2	MW141	1
Suspected AFFF Disposal Area	MW101	1
Top, Middle and Lower Dams	MW138	1
Base Boundary	MW002, MW003, MW118, MW119, MW124, MW125I, MW125S	7
Off-Base	MW205S, MW212, MW217, MW220S, MW226[3], MW232, MW233, MW235S, MW236S	9
Total		**46**

[2] The existing monitoring well (MW128) will be destroyed as part of remediation and not re-instated as per the RAP, and thus may be changed to MW126, which is part of post-remediation monitoring.

[3] MW226 is not shown on the attached Figure 3 due to privacy concerns.

5.1.3 Surface Water Sampling Locations

The list of 31 surface water sampling locations to be monitored in the wet and dry season sampling events in the Management Area are provided in Table 5.3 and presented in Figure 4, Appendix A. Stakeholder access permission is required to access and sample SW/SD211 and SW/SD212, which are located on private property. These locations have been selected to maintain consistency with the recent monitoring completed within the Management Area. Surface water locations are co-located with sediment sampling locations, and surface water will be collected where present.

Table 5.3 Surface Water Sampling Locations

Investigation/Source Area	Location ID	Number of Locations
Eastern PFAS Contamination Area	SW119, SW121	2
Former Fire Station	SW109, SW110	2
Lavarack Golf Course & Sporting Field	SW129, SW130	2
Top, Middle and Lower Dams	SW139, SW140, SW144	3
On-Base Balance	SW113, SW120	2
Base Boundary	SW126, SW128, SW132, SW133, SW134, SW135, SW136	7
Off-Base	SW203, SW205, SW211, SW212, SW217, SW220, SW227, SW232, SW233, SW242, SW243, SW244, SW245	13
Total		**31**

It is noted that the surface water monitoring locations listed under this SAQP for the 2024 dry season sampling event are subject to change for future sampling events in the updated OMP. It is also noted that the subsequent sampling events after this dry season event will conform to any updates to the surface water monitoring locations and their frequency as listed in the updated OMP. The surface water monitoring locations in the updated OMP will be derived following consideration of enhancing the monitoring program to include rising stage samplers in select locations for the wet season sampling events, additional sampling locations to monitor remediation performance, and additional locations in newly identified potential source areas.

5.1.4 Sediment Sampling Locations

The list of 31 sediment sampling locations to be monitored in the wet and dry season sampling events in the Management Area are provided in Table 5.4 and presented in Figure 4, Appendix A. These locations have been selected to maintain consistency with the recent monitoring completed within the Management Area.

Table 5.4 Sediment Sampling Locations

Investigation/Source Area	Location ID	number of locations
Eastern PFAS Contamination Area	SD119, SD121	2
Former Fire Station	SD109, SD110	2
Lavarack Golf Course & Sporting Field	SD129, SD130	2
Top, Middle and Lower Dams	SD139, SD140, SD144	3
On-Base Balance	SD113, SD120	2
Base Boundary	SD126, SD128, SD132, SD133, SD134, SD135, SD136	7
Off-Base	SD203, SD205, SD211, SD212, SD217, SD220, SD227, SD232, SD233, SD242, SD243, SD244, SD245	13

Investigation/Source Area	Location ID	number of locations
Total		**31**

It is noted that the sediment water monitoring locations listed under this SAQP for the 2024 dry season sampling event are subject to change in the updated OMP. It is also noted that the subsequent sampling events after this dry season event will conform to any updates to the surface water monitoring locations (to which there are concurrent sediment sampling locations) and the frequency of sampling for sediment quality as listed in the updated OMP.

5.2 General Field Methods for PFAS Sampling

5.2.1 Sample Collection

Collection of PFAS samples will be conducted in accordance with PFAS NEMP (HEPA, 2020). Due to the extremely low laboratory method detection limits associated with PFAS sampling and the many potential sources of trace levels of PFAS, field staff will employ a high degree of caution by strictly following the protocols described below:

- A new pair of nitrile gloves must be worn for each sample collection event.
- Equipment (such as water quality meters and interface probes) containing PTFE or aluminium foil is to be avoided unless it has been confirmed not to impact sample integrity or be a source of PFAS contamination.
- Equipment that contacts sediment, surface water, or groundwater must not be coated with polytetrafluoroethylene (PTFE; such as Teflon©) unless the PTFE is internal to the equipment and does not contact the external environment.
- Decontamination of equipment must avoid the use of detergents unless they have been confirmed to be PFAS-free. Instead, tap water (tested to ensure it is PFAS-free) or deionised water should be used for cleaning and decontamination, where possible.
- Samples for PFAS analysis should be collected in bottles or containers provided by the laboratory that are suitable for PFAS analysis. These bottles and containers shall be composed of polypropylene or high-density polyethylene (HDPE).
- The required minimum volume for each water PFAS sample is in the order of 50 to 250 mL (varies by laboratory). Larger sample volumes may be necessary if the required LORs are ultra-trace, and for allowing sufficient volume for laboratory QA/QC analysis.
- Rinsate samples must be collected if there is doubt about whether sampling equipment, or other materials in the work area, are PFAS-free, including when detergents and secondary containers are being used.

5.2.2 Sample Handling and Labelling

Samples will be handled and labelled using the following protocols:

- During sample processing and storage, sample exposure to light will be minimised.
- Writing on labels will be done using ballpoint pen or fine or ultra-fine point Sharpie®. Ink will be allowed to dry and then each sample bottle or container bagged within a Ziploc bag.
- Ziploc-bagged sample bottles or containers will be transferred to eskys with double bagged crushed ice to maintain samples below 4ºC. Eskys shall be dispatched to the NATA certified analytical laboratories for analysis as soon as practical. Chemical or gel-based coolant products (blue ice) must not be used in lieu of crushed ice.

If in doubt, trip blanks will be used to determine if there is any potential for cross-contamination.

5.2.3 Summary of Identified Sources of PFAS Contamination Recommended Alternatives

The following products/items should be avoided wherever possible during sampling programs; if there is a need to use a listed product/item during a sampling event, then a rinsate sample should be collected from the item to confirm that the item is PFAS-free:

- new field clothing; before use, field clothing must be washed many times (e.g., at least 6 times) after purchase
- clothing with waterproof coatings (e.g., Goretex or Tyvek); if this clothing must be used, avoid sampling during a rain event wherever possible. Polyethylene, vinyl, or polyvinyl chloride (PVC) clothing are acceptable
- fast food wrappers and containers for food or general storage; use rigid plastic containers, plastic bags, or stainless-steel containers for food or general storage
- sunscreen, if possible; however, if personal sunscreen application is necessary, ensure hands are washed thoroughly with soap after application and rinsed thoroughly in tap water before donning a clean, new pair of nitrile gloves
- Teflon© or other PTFE-containing products; use HDPE or polypropylene equipment
- aluminium foil
- self-sticking notes and similar products (e.g., post-it notes)
- waterproof paper, notebooks and labels; use standard paper and standard labels
- blue ice; use double-bagged, crushed ice.

5.3 Groundwater

5.3.1 Groundwater Gauging

Standing water level and depth to bottom of well will be measured prior to and after undertaking groundwater sampling. Within the Management Area, previous investigations have not identified non-aqueous phase liquid (NAPL) in the groundwater. Regardless, groundwater gauging will be undertaken using an oil/water interface probe to verify absence of NAPL. Presence of NAPL may indirectly indicate potential activities associated with PFAS and/or co-occurring contaminants. If NAPL is detected in the groundwater, the presence of NAPL is to be visually confirmed using a bailer and photographed. Sampling for PFAS is to be conducted at a depth below the layer of NAPL, where present.

Groundwater gauging measurements are to be taken from marked reference points by a surveyor or previous monitoring events (typically on top of well casing). If no marked reference point is observed on arrival, the highest point on top of the casing is to be marked and used as the reference point for future monitoring events. Any newly installed groundwater wells will be surveyed by a licenced surveyor who will establish a marked reference point.

5.3.2 Groundwater Sampling

Groundwater sampling will be conducted at 37 locations during the sampling event (refer to Figure 4, Appendix A for locations). Groundwater sampling will be undertaken using the HydraSleeve grab sample method. This method is in accordance with the requirement of the PFAS NEMP (HEPA, 2020), and is consistent with the sampling methods employed to date. The order in which sampling is performed will be planned from inferred least contaminated wells to most contaminated wells, where practicable.

HydraSleeve™ samplers are passive, grab sampling devices composed of HDPE used to collect groundwater samples from the screened interval of a well without requiring the well to be purged prior to sampling. Grab samples will be collected from the water column within the screened interval of the well. The HydraSleeve requires a minimum of 1 to 1.5 times its length in water depth within the screened interval to fill the sampler to retrieve a representative sample. A disposable bailer will be used where the well contains insufficient water depth within the screened interval to use

HydraSleeves. Well construction details will be reviewed prior to field deployment to confirm the nominated wells have sufficient available water column. The HydraSleeve grab sample method reduces the potential of cross contamination by utilising sampling equipment made from non-PFAS containing materials. The groundwater sampling protocols, including sampler installation and sample collection is outlined below:

Sampler Installation

- Nylon rope (untreated and undyed) will be used as a tether to lower the HydraSleeve down into the well. The length of rope will be measured from the well reference point (i.e. top of casing or where the tether will be tied off) to the desired depth of the top of the HydraSleeve. The top of the HydraSleeve will sit within the well screen with at least one HydraSleeve length of water column depth above the top of the HydraSleeve (i.e. immediately below the desired sampling interval).
- The end of the nylon rope will be attached to a stainless-steel spring clip, which will be hooked to the top of the HydraSleeve through two pre-made holes.
- A stainless-steel weight will be attached to the bottom of the HydraSleeve using a stainless-steel clip through two pre-made holes.
- A stainless-steel weight will be attached to the top of the HydraSleeve if the available water column depth above the top of the HydraSleeve is <1.5 m (and >1.0 m). This weight compresses the top of the HydraSleeve providing an increased water column.
- After the HydraSleeve is attached to both the weight and the tether it shall be lowered slowly (with the intention of minimizing disturbance) to its designated depth within the well screen. Note, once deployment begins, upward motion should be avoided as the check valve will open and start allowing water to enter the HydraSleeve.
- For this work, WSP plans to deploy the HydraSleeve at the beginning of the program and collect following a period of no less than 72 hours to allow a longer period for well equilibration.

Sampler Retrieval and Collection

- For sample collection, the HydraSleeve will be pulled up to the surface at a steady rate of approximately 1 metre per second (m/sec). The initial upward motion will open the check-valve and allow the HydraSleeve to fill with water while in the screened interval.
- A disposable plastic straw, provided by the manufacturer with the HydraSleeve, will be used to puncture the HydraSleeve after it is recovered from the well and the water will be transferred into laboratory supplied sample containers. A new pair of nitrile gloves will be worn when handling the HydraSleeve and sample containers at each well location.
- The physico-chemical water quality parameters are to be measured ex-situ using the remaining water retrieved from the HydraSleeve and placed into a clean laboratory supplied bottle. Parameters to be measured using a calibrated multiparameter water quality meter include dissolved oxygen (DO), temperature, pH, electrical conductivity (EC), redox potential (Eh), total dissolved solids (TDS), salinity, and turbidity. The measured water quality parameters will be recorded.
- Visual descriptions of the groundwater including, colour, turbidity, and odour will be recorded during sampling.

5.4 Surface Water

Surface water sampling will be conducted at 31 locations during the sampling event (refer to Figure 4, Appendix A for locations). Surface water sampling will utilize a grab sample technique for sample collection in accordance with the following protocols:

- A new pair of nitrile gloves will be worn at each sampling location when collecting and handling sample containers.

- Surface water samples will be collected as grab samples directly into a new dedicated sample bottle for each sample (approximately 50 to 250 mL volume, depending on the laboratory requirements). As practicable, the sample bottle with the cap removed should be inverted into the surface water and slowly turned upright so that water fills the bottle from just below the water surface. Once the bottle is filled, it should be removed from the surface water and capped and placed in a chilled esky.
- Where access to the surface water is limited by depth to water, equipment and structures, or uneven and unstable ground, a new dedicated sample bottle attached to a telescopic sampling pole will be used.
- After the sample is collected and placed in the esky, a calibrated water quality sonde will be lowered into the surface water and in-situ water quality parameters measured. The in situ physico-chemical water quality parameters will be consistent with those measured in the groundwater wells, and include DO, temperature, pH, EC, Eh, TDS, salinity, and turbidity. The measured water quality parameters will also be recorded. Where the sonde cannot be lowered directly into the surface water safely or feasibly, field measurements will be taken from a representative water sample collected in cleaned and primed container with sufficient volume to allow a reliable measurement of the field parameters of collected sample (in this circumstance, note that DO, temperature, pH, and redox measurements may be subject to some uncertainty, which should be noted in the field notes).
- Visual descriptions of the water including clarity, turbidity, colour. odour, and the presence and extent of any vegetation (e.g., emergent grasses, algae, aquatic plants) will be recorded in the field notes.
- Assessment of the presence of water flow at the sampling locations through observation, using the following characterisation of flow condition:
  - Dry (no water)
  - No flow (stagnant water)
  - Flowing (e.g., low / medium / strong)

  The assessment to include the source of the flow (i.e. flowing from up-stream surface water source, from groundwater discharge to the surface water).

5.5 Sediment

Sediment sampling will be conducted at 31 locations (co-located with surface water samples) during the sampling event (refer to Figure 4, Appendix A for locations). Sediment samples will be collected in accordance with the following protocols:

- Sediments samples will be collected after surface water sampling has been completed at the location to minimise potential disturbance and the mobilization of suspended sediment, which would have the potential to contaminate a water sample.
- Sediment samples will be collected from within the water course using a stainless-steel hand trowel or shovel (where possible), or a grab sampler.
- Sediment samples will be placed directly into the laboratory-supplied HDPE or polypropylene containers. The containers will be filled completely to minimize surface-to-volume ratio and therefore the likelihood of PFAS loss via sorption.
- Upon collection, the sediment sample will be described, including appearance, odour and grain size, texture, inorganic and organic component, and the presence of vegetation (e.g., algae, aquatic plants, organic detritus).

Some sampling locations are placed in concrete drains, which means that sources of representative deposited watercourse sediment may not be readily available for sampling. If natural drainage areas are evident and accessible immediately downstream of the sampling location (i.e., within 50 to 100 m), surface sediment samples should be collected from these

areas. At sampling locations where this adjustment in sampling approach is applied, the change in sample location and its coordinates should be recorded in the field notes.

5.6 Sample Containers

New clean sample containers will be provided by the NATA certified analytical laboratories for collection of each sample media type.

5.7 Sample Naming Convention

Each sample will be labelled with a unique sample identification number that will facilitate tracking and cross-referencing of sample information, in accordance with naming conventions within Defence Management Manual, Annex L Guidance on Data Management (Defence, 2018 as amended 2021).

Sample Location and Sample Identification

PPPP_XX000_YYMMDD

e.g. 0229_MW100_241002

Legend

PPPP – Property ID (always 4 digits, Lavarack Barracks - 0229)

XX – Type of sample recovery (SD – sediment, SW – surface water, MW – monitoring well)

000 – Location identifying number

YY – Year

MM – Month

DD – Day

QA/QC samples will also be numbered with a unique sample identifier, as follows:

Duplicate (primary duplicate) - PPPP_QC1XX_YYMMDD

Triplicate (secondary duplicate) - PPPP_QC2XX_YYMMDD

Rinsate Blank- PPPP_QC3XX_YYMMDD

Field Blank - PPPP_QC4XX_YYMMDD

Trip Blank- PPPP_QC5XX_YYMMDD

5.8 Defence ESDAT Requirements

Defence has contracted Earth Science Information Systems (EScIS) to provide data management services for the groundwater, water, and sediment monitoring programs, such as the OMP, through a cloud framework of its ESdat product. OMP field and laboratory data collected will be uploaded, stored, and managed in Defence's ESdat database in accordance with Section 6 of Defence Contamination Management Manual (DCMM) Annex L Guidance on Data Management (Defence, 2018, amended June 2021).

Historical investigation data will be referenced to make sure consistent location codes are used to enable analysis of data trends. Where required under Annex L, non-compliant location codes will be resolved under direction from Defence. Data from each sampling event will be upload into ESdat prior to submitting the Sampling Event Report (SER).

5.9 Equipment Decontamination

Sampling equipment will be decontaminated prior to first use and between sampling locations. Sampling equipment will be decontaminated at a distance (>5 m) from the sampling location to reduce the potential for cross-contamination. Equipment will be air dried before use for sampling. A new pair of nitrile gloves will be worn by the field crew at each groundwater well and surface water sampling location, and when cleaning equipment or handling cleaned equipment. Dedicated equipment or disposable items will not be decontaminated. Single-use equipment will be disposed of appropriately following use.

5.10 Waste Management

The approach for the handling of wastes generated during the PFAS assessment works will be in line with the Defence PFAS Construction and Maintenance Framework (DoD, 2019b) and regulatory requirements (HEPA, 2020). Sampling equipment will be reused where possible. Single use equipment will have the sample contents removed to the extent practicable before being disposed of into designated general waste bins.

Due to the proposed HydraSleeve “no purge” sampling approach for groundwater sampling, it is not anticipated liquid waste would be generated in sufficient volumes to require management or disposal. Wastewater generated will be discharged to ground directly adjacent to the well in grassed areas.

No waste soil will be generated due to the proposed grab sampling approach.

5.11 Field Records

Field notes will include, but not limited to:

- Date and initials of field person
- Weather conditions
- Description of any difficulties or deviations from standard procedures
- Field observations of the visual characteristics of groundwater, surface water, and sediment samples, including flow conditions at the surface water monitoring locations.

6 Adopted Screening Criteria

Human health investigation levels (HILs) for Perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), and perfluorohexane sulfonate (PFHxS) were derived in the PFAS NEMP (HEPA, 2020) using methods consistent with assumptions set out in the NEPM (1999 amended 2013). The criteria to be adopted for the ESA are outlined in Table 6.1.

Table 6.1 PFAS Screening Criteria

Pathway	Compound	Criteria	Comments
Human Health Receptors			
Off-Base – Drinking Water	PFOS + PFHxS	0.07 µg/L	Off-Base groundwater results will be compared to these criteria. Only surface water results from SW245 will be compared to these criteria. This is the only surface water location within the emergency drinking water supply for Townsville and is upgradient of Blacks Weir and not tidally influenced.
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	All surface water and groundwater results will be compared to these criteria.
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater and marine water (95% species protection values)	PFOS	0.13 µg/L	All surface water and groundwater results will be compared to these criteria.
	PFOA	220 µg/L	

(1) Per the NEMP (HEPA, 2020), where the guideline values refer to the sum of PFOS and PFHxS, this includes PFOS only, PFHxS only, and the sum of the two.

It is noted that at the time this SAQP was prepared, no PFAS NEMP (HEPA, 2020) endorsed criteria were available for PFAS in sediments. However, guideline criteria will be reviewed annually and updated based on the HEPA endorsed criteria at the time.

7 Proposed Reporting Framework

After the 2024 dry season sampling event, field and laboratory data will be documented in a Sampling Event Report (SER), which will conform to the requirements of the Defence guidance for Ongoing Monitoring Program Reporting (Defence, 2024). The SER will be delivered in the form of a letter summarising the objectives, scope, and methods employed during the sampling event, as well as identifying key observations and any notable changes in PFAS concentrations at the monitoring locations, including exceedances of trigger levels during the sampling event. It is noted that further to discussion with Defence, triggers and actions are being refined in the OMP update. The SER will identify when exceedances of trigger levels occur, and any immediate corresponding actions; however, full interpretation of the data (e.g., trend analysis) will only be provided in the Ongoing Monitoring Report (OMR).

The SER will include conclusions and recommendations based on the sampling event, detailing actions and considerations in advance of the next sampling event. An appendix will be attached to the SER, which will include field observations made during the program, analytical result tables that include comparisons with PFAS guidelines and screening criteria, laboratory analytical certificates, and QA/QC reports. In addition, a dashboard review of the data will be created and shared with Defence for easy interpretation of data.

The data collected from the 2024 dry season sampling event will be incorporated with subsequent monitoring program results (i.e., from sampling events undertaken in 2025), including previous sampling events (past and historic) data, and an OMR prepared. The OMR will conform to the requirements of the Defence guidance for Ongoing Monitoring Program Reporting (Defence, 2024). The framework and information and data inclusions for the OMR will be provided in the updated OMP.

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— Standards Australia 1998c, *Water Quality—Sampling. Part 11: Guidance on sampling of groundwaters (AS/NZS 5667.11:1998)*.

— Standards Australia 1998d. *Water Quality—Sampling. Part 12: Guidance on sampling of bottom sediments (AS/NZS 5667.12:1998)*.

Appendix A

Figures

KEY MAP

LEGEND

- Management Area
- Lavarack Barracks Base Boundary
- RAAF Base Townsville
- Watercourse

0 1,000 2,000 3,000 4,000 5,000

1:75,000 METRES

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)
1. AERIAL IMAGERY AND KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
2. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
SITE LOCALITY

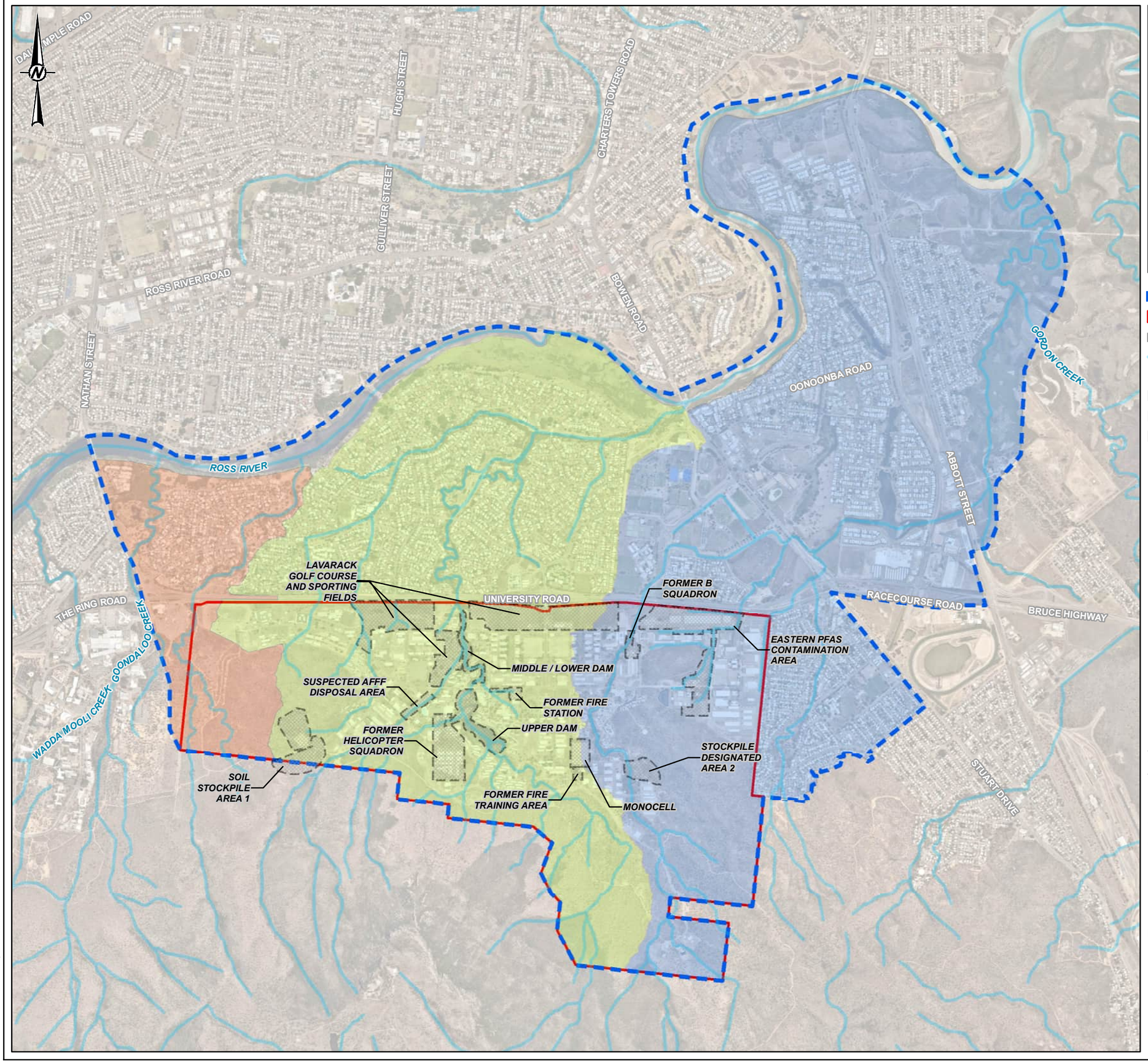
CONSULTANT
wsp

YYYY-MM-DD	2024-06-05
DESIGNED	-
PREPARED	MAH
REVIEWED	AJ
APPROVED	JF

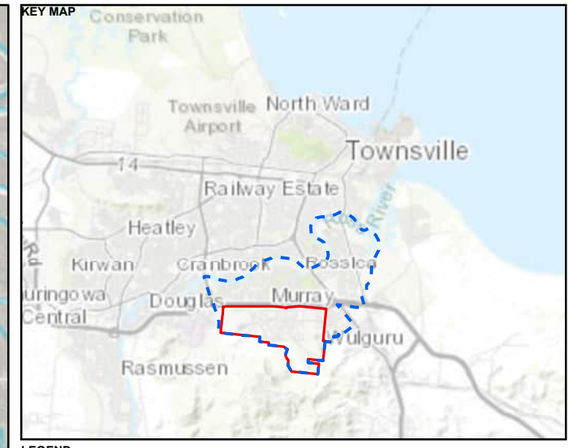
PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	086-R	A	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3
25mm
0

PATH: Y:\Transition\Golder\Melbourne\Corp\kxData\GIS\Jobs\2021\21456\048\Mxd\086-R-PS129286-086-R-F0001-RevA_Site_Locality.mxd PRINTED ON: 2024-06-05 AT: 12:51:00 PM



KEY MAP



LEGEND

- Management Area
- Base Boundary
- Source Area
- Watercourse

Approximate Sub-Catchments

- West
- Central
- East

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/09/2021.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
MANAGEMENT AREA

CONSULTANT

YYYY-MM-DD	2024-06-04
DESIGNED	-
PREPARED	MAH
REVIEWED	AJ
APPROVED	JF

PROJECT NO.	CONTROL	REV.	FIGURE
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25mm

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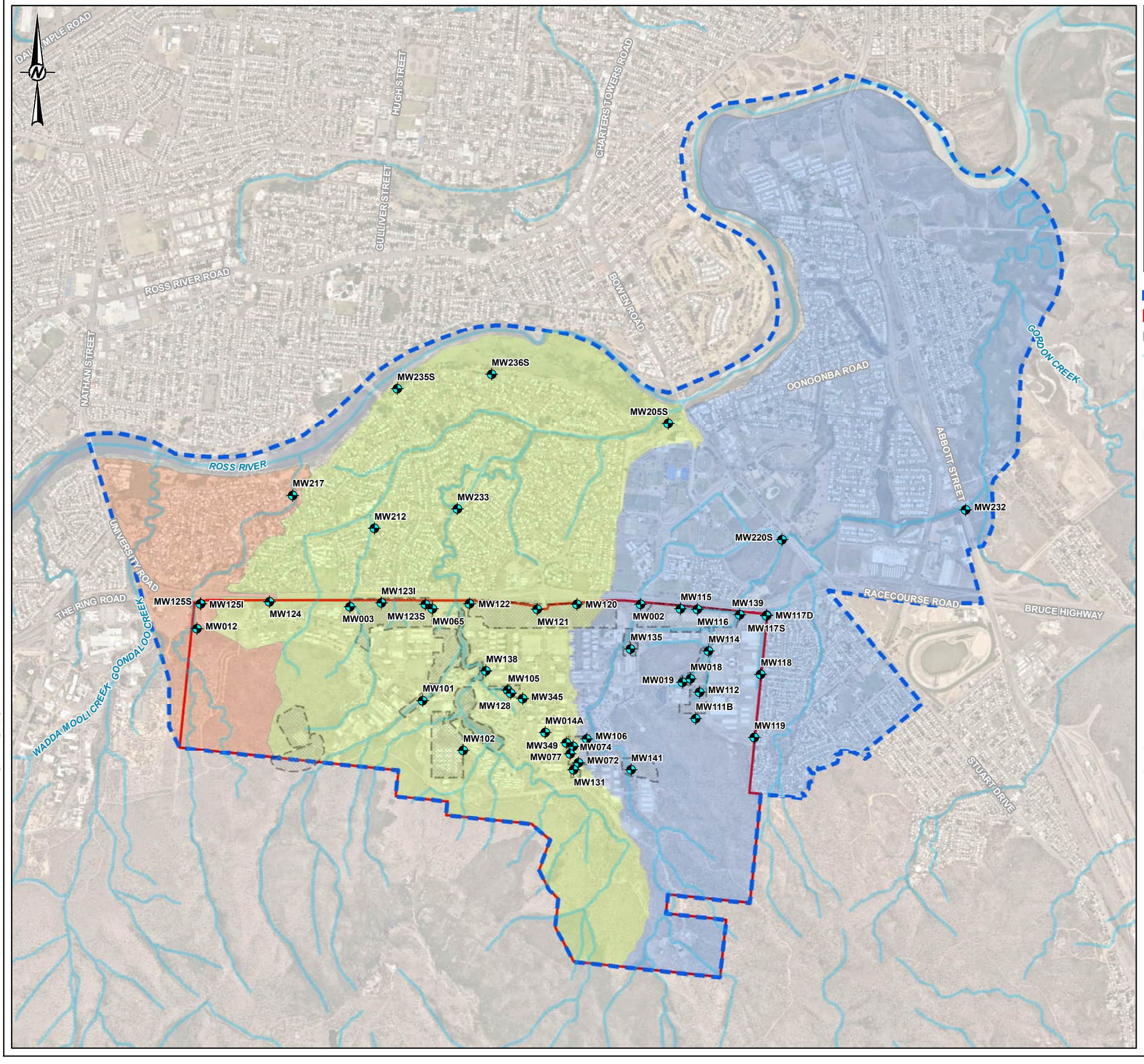

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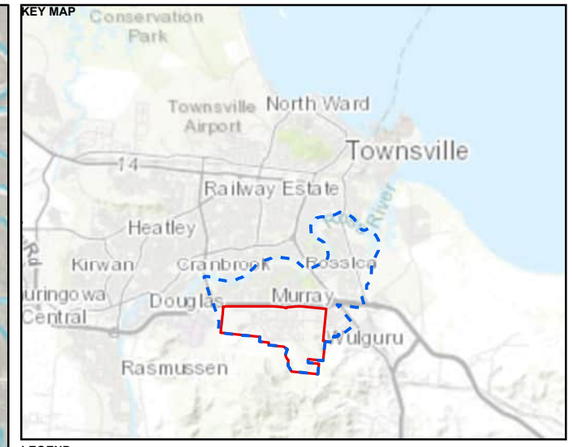

LEGEND

- Management Area
- Base Boundary
- Source Area
- Watercourse

Approximate Sub-Catchments

- West
- Central
- East
- Groundwater Sampling Location

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/09/2021.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
GROUNDWATER SAMPLING LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-09-30
DESIGNED	-
PREPARED	MAH
REVIEWED	AJ
APPROVED	JF

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	086-R	A	3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3

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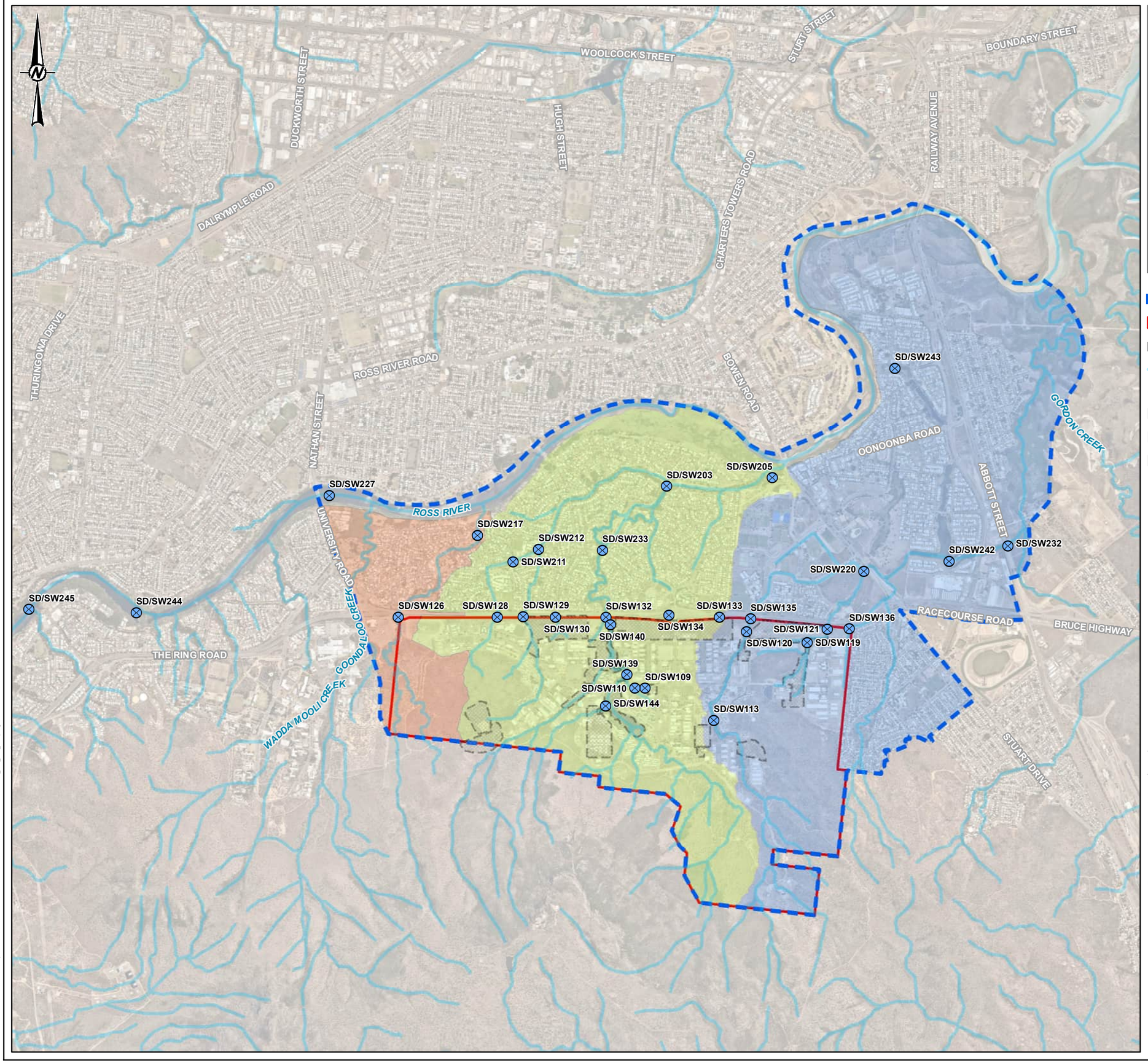

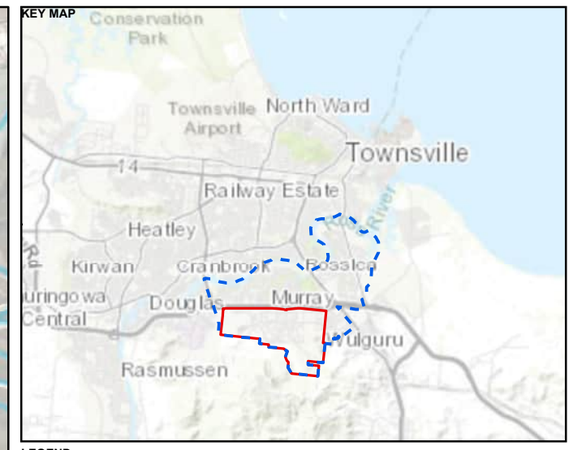

LEGEND

- Management Area
- Base Boundary
- Source Area
- Watercourse

Approximate Sub-Catchments

- West
- Central
- East
- Co-located Surface Water and Sediment Sampling Location

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 21/09/2021.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS

CONSULTANT

YYYY-MM-DD	2024-07-30
DESIGNED	-
PREPARED	MAH
REVIEWED	AJ
APPROVED	JF

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	086-R	A	4

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C1 Deviations from SAQP

Table C1 - Deviations from SAQP (October 2020 to October 2024)

SAQP Requirement	Sampling event deviation	Impact of deviation on data set
October 2020 Biannual Sampling Event (AECOM 2021a)		
Collection of surface water at SW150	Surface water sample location SW150 described in the OMP as being from a tap, could not be located and an appropriate location for sampling was unable to be identified.	Minor – No data available at this location for dry season 2020.
Co-located surface water and sediment samples were scheduled to be collected from SD/SW211 and SD/SW212.	During the sampling event it was identified that SD211/SW211 and SW212/SD212 are located on private property. Results from these locations were not included in the factual report and consent for the sampling was sought for subsequent events.	Nil
Collection of surface water at SW109, SW110, SW120, SW126, SW128, SW129, SW130, SW133, SW136, SW137	These locations were dry during the sampling event and samples of surface water were unable to be collected.	Minor – No data available at these locations for dry season 2020. The data set is considered representative of the conditions within the Management Area being monitored.
The water quality meter will be calibrated each day prior to the commencement of field activities.	The SAQP states the water quality meter is to be calibrated each day prior to the commencement to field activities. During this sampling event, the water quality meter was calibrated at the end of each day of sampling in preparation for the following day.	Nil. The water quality meter calibration demonstrated that the calibration was not affected by the timing of the calibration.
March/April 2021 Biannual Sampling Event (AECOM 2021b)		
Collection of surface water at SW133	No surface water was available and as such the sample was not collected.	Minor – No data available at this location for wet season 2021. The data set is considered representative of the conditions within the Management Area being monitored.
Co-located surface water and sediment samples at SW137/SD137	Sampling location SW137/SD137 was replaced by location SW144/SD144 as SW144/SD144 is the intended sampling location in the PMAP.	Nil

SAQP Requirement	Sampling event deviation	Impact of deviation on data set
Collection of duplicate and triplicate samples at a rate of one in ten primary samples for sediment.	The SAQP states the duplicate and triplicate samples are to be collected at a rate of 10% being one in ten primary samples. A total of 31 primary samples were analysed with three out of the required four pairs of the duplicate and triplicate samples analysed for an actual rate of 9.6%.	Minor - The actual rate of 9.6% is marginally lower than the target rate of 10%, AECOM considers this difference to be negligible and that the data is sufficient for the purposes of the ongoing monitoring program.
Collection of rinsate samples at a rate of one per day of sampling.	One rinsate blank sample collected on 29 March 2021 returned detections of PFOS and (PFHxS. Two surface water samples (SW135 and SW139) were re-sampled on 22 June 2021 due to the risk of cross contamination of surface water samples collected on 29 March 2021.	Nil
August 2021 Biannual Sampling Event (AECOM 2021c)		
Collection of surface water at SW109, SW110, SW129, SW130, SW113, SW120, SW126, SW128, SW132, SW133, SW136	No surface water was available and as such the samples were not collected.	Minor. No data available at these locations for dry season 2021. The data set is considered representative of the conditions within the Management Area being monitored.
Collection of sediment at SD132	High proportion of large cobbles and no sediment and as such no sediment sample was collected.	Nil. The data set is considered representative of the conditions within the Management Area being monitored.
February – April 2022 Biannual Sampling Event (AECOM 2022)		
Collection of surface water at SW120, SW126, SW128, SW129, SW130, SW133, SW134	No surface water was present at the time of the initial sampling round in March 2022 at SW120, SW126, SW128, SW129, SW130, SW133, SW134. Sampling was completed in April 2022, following rainfall when surface water was present.	Nil. Following rainfall, the locations were sampled.
Collection of sediment at SD121, SD132, SD242	No sediment was present in the March 2022 sampling event and was therefore collected following rainfall in April 2022.	Nil Data set is considered representative of broader Base conditions at the time of data collection

SAQP Requirement	Sampling event deviation	Impact of deviation on data set
Collection of groundwater samples from MW117S, MW117D, MW118 and MW119 as part of 2022 wet season.	Monitoring wells were accessed for sampling two weeks before the main sampling event as the wells were in a construction zone, and some wells were set to be destroyed during the construction works. MW117S was not sampled as it had already been destroyed. The HydraSleeve™ at MW117D was removed by construction workers prior to destruction and was observed to have a high sediment load.	No data were available from MW117S as the well was destroyed. The results from MW117D were interpreted with caution as sample collection was not completed in accordance with the SAQP.
Collection of additional groundwater sample from MW217.	Laboratory analytical results for the sample collected at MW217 on 3 March 2022 indicated PFAS detections higher than previous results for this location (including 0.06 µg/L 6:2 Fluorotelomer sulfonic acid (6:2 FTS), 0.02 µg/L PFHxS and 0.08 µg/L PFOS). Resampling in April 2022 confirmed that only PFHxS was present at detectable concentrations (0.01 µg/L).	Resampling of the well indicated PFOS concentrations were below the limit of reporting and consistent with historical results, therefore results for MW217 collected on 3 March 2022 were not verified, not considered representative of PFAS concentrations and discarded. The April 2022 result was accepted.
Collection of additional surface water sample at SW110.	Laboratory analytical results for the sample collected at SW110 on 1 March 2022 detected a new maximum PFAS concentration (sum of PFAS 95.6 µg/L). To verify the result, the location was resampled on 26 April 2022.	The results from resampling of SW110 on 26 April 2022 indicated PFAS concentrations were below the initial sampling result on 1 March 2022, and historical results, possibly due to recent rainfall. Therefore, both results from March and April 2022 were accepted as representative of surface water PFAS concentrations at this location in the post wet season event for 2022.
August – October 2022 Biannual Sampling Event (AECOM 2023c)		
Collection of surface water at SW119, SW120, SW126, SW128, SW129, SW130, SW132, SW133, SW134 and SW136	No surface water was present during the dry season sampling event at SW119, SW120, SW126, SW128, SW129, SW130, SW132, SW133, SW134 and SW136.	The data set is considered representative of the conditions within the Management Area being monitored.

SAQP Requirement	Sampling event deviation	Impact of deviation on data set
Gauging and sampling at MW235S.	Depth to groundwater could not be measured at MW235S during the gauging round.	Following clearing of the roots in the well, samples were able to be collected using a decontaminated steel bailer from MW235S and sufficient gauging data was collected across the base to determine groundwater flow direction. No impact on the data set.
Collection of sediment sample from SD120.	Sediment was collected at SD120 in September 2022 after the main sampling event due to access issues during the August sampling round	The location was able to be accessed, and a sample obtained with no impact on the data set.
Collection of additional groundwater sample at MW131. Trip blank and rinsate samples not collected for verification sampling.	Laboratory analytical results for the sample collected at MW131 on 26 August 2022 indicated PFAS detections (sum of PFAS 656 µg/L) an order magnitude higher than historical maximum results. To verify the result, the well was resampled on 7 October 2022.	Resampling of the well indicated PFAS concentrations were closer to the previous historical maximum (pre-August 2022), however were still higher. The October 2022 result was accepted as representative of groundwater PFAS concentrations for the 2022 dry season. Further sampling is required to establish if this is a potential increasing trend at this location. No impact to data set from absence of trip blank and rinsate for verification sampling.
Collection of additional surface water sample at SW110. Trip blank and rinsate samples not collected for verification sampling.	Laboratory analytical results for the sample collected at SW110 on 22 August 2022 detected a new maximum PFAS concentration (sum of PFAS 95.6 µg/L). To verify the result, the location was resampled on 7 October 2022.	The results from resampling of the location in October 2022 indicated PFAS concentrations within the same order as the initial sampling result on 22 August 2022 and consistent with historical maximum concentrations. Therefore, both results from August and October 2022 were accepted as representative of surface water PFAS concentrations at this location in the dry season for 2022. No impact to data set from absence of trip blank and rinsate for verification sampling.

SAQP Requirement	Sampling event deviation	Impact of deviation on data set
March 2023 Biannual Sampling Event (AECOM 2023d)		
Collection of surface water at SW120 and SW121	SW120 was noted as dry and couldn't be sampled. SW121 couldn't be sampled due to overgrown vegetation preventing access to water.	Minor No data available at these locations for wet season 2023. The data set is considered representative of the conditions within the Management Area being monitored.
August 2023 Biannual Sampling Event (AECOM 2024a)		
Collection of surface water at SW120, SW121, SW126, SW129, SW130, SW133, and SW136.	No surface water was present.	Nil. The result is reflective of sampling location conditions at the time of monitoring.
HydraSleeves™ installed within screened interval	HydraSleeves™ were installed based on measured well depth. Review of the provided ESdat well screen interval information indicates that there are discrepancies between documented well screen interval, recorded well depth and the actual well depth when measured. Therefore, it appears that the HydraSleeves™ may have been installed below the documented screened interval. However, the ESdat well construction details mostly state that the bottom screen interval depth equals the well depth.	Review of the data and previous results for MW106, MW123I, MW124 and MW125I indicates results are lower than or within the same order of magnitude and water is of similar or comparable condition to previous rounds and therefore considered to be representative of groundwater conditions at these locations.
March 2024 Biannual Sampling Event (AECOM 2024b)		
Collection of surface water and sediment at SW/SD205	No safe access to this location due to overgrown vegetation and steep bank.	Minor. The current and historical data set is considered representative of broader on- and off-Base conditions.
October 2024 Biannual Sampling Event (WSP 2025)		
Collection of groundwater at MW101 and MW235S	MW101 was dry and MW235S was blocked during sampling and water samples were not collected.	Minor Data set is considered minor as data collected to date (since 2018) are considered representative of the general condition of these wells.

SAQP Requirement	Sampling event deviation	Impact of deviation on data set
Collection of groundwater at MW111B.	MW111B could not be located.	As no previous groundwater data are available for this location, it is believed that this well was not installed as part of a previous investigation program. Given this monitoring well is to provide up-gradient groundwater quality, as was requested by Defence to be included in the OMP, the impact of its exclusion on the OMP is considered negligible.
Collection of field physico-chemical water quality parameter measurements at every well location.	No water quality parameters were collected at MW121 (no field data were recorded) and at a number of locations where instrument failure prevented the collection of dissolved oxygen measurements.	Given that historical data are available since 2018 and that the groundwater condition in the area is well established, the impact of these missing field data is considered minor.
Collection of surface water at SW110, SW129, SW130, SW113, SW120, SW126, SW128, SW133, and SW136.	These locations did not have water present during the dry season sampling.	Nil Data collected to date (since 2018) are considered representative of the general condition of these locations.

Appendix D

Sampling event reports

Prepared for
Department of Defence
ABN: 68 706 814 312

Dry Season Sampling Factual Report, August 2023

PFAS OMP - Lavarack Barracks Townsville

16-Jan-2024
PFAS Ongoing Monitoring Program - Lavarack Barracks Townsville
Doc No. 60612487_RP107_20240116_0

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Dry Season Sampling Factual Report, August 2023

PFAS OMP - Lavarack Barracks Townsville

Client: Department of Defence

ABN: 68 706 814 312

Prepared by

AECOM Australia Pty Ltd
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16-Jan-2024

Job No.: 60612487

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 and ISO45001.

Quality Information

Document Dry Season Sampling Factual Report, August 2023

Ref 60612487_RP107_20231214_B

Date 16-Jan-2024

Prepared by [redacted]

Reviewed by [redacted]

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	6-Nov-2023	Draft for Review	[redacted]	
B	14-Dec-2023	Revised draft for Review	[redacted]	
0	16-Jan-2024	Final Issue	[redacted]	[redacted]

Table of Contents

1.0 Introduction 1
1.1 General 1
1.2 Objectives 1
2.0 Scope of Work 2
3.0 Methodology 4
3.1 Groundwater Sampling Methodology 4
3.2 Surface Water Sampling Methodology 4
3.3 Sediment Sampling Methodology 5
3.4 Quality Assurance / Quality Control and Analysis 5
3.5 Adopted Screening Criteria 6
3.6 Data Quality Objectives and Data Validation 6
3.7 Deviations from the SAQP 7
4.0 Field Observations and Results 8
4.1 Groundwater 8
4.1.1 Observations and Field Measurements 8
4.1.2 Groundwater Analytical Results 9
4.2 Surface Water 10
4.2.1 Observations and Field Measurements 10
4.2.2 PFAS Surface Water Analytical Results 11
4.3 Sediment 11
4.3.1 Observations and Field Measurements 11
4.3.2 PFAS Sediment Analytical Results 11
5.0 Summary and Next Sampling Event 13
5.1 Summary of Sampling Event 13
5.2 Upcoming Sampling Events 13
5.3 Upcoming Ongoing Monitoring Interpretive Report 13
6.0 References 14

Appendix A
Figures A

Appendix B
Analytical Tables B

Appendix C
Data Validation C

Appendix D
Chain of Custody Records D

Appendix E
Laboratory Analytical Reports E

Appendix F
Calibration Certificates F

List of Figures (Appendix A)

Figure 1 Lavarack Barracks Location and Source Areas
Figure 2 Groundwater Monitoring Locations
Figure 3 Surface Water and Sediment Monitoring Locations
Figure 4 Inferred Groundwater Contours- Shallow Aquifer (Alluvium) Dry Season – August 2023
Figure 5 First-time detections or new exceedances of PFOS + PFHxS, PFOS or PFOA

List of Tables (Appendix B)

Table T1 Groundwater Gauging and Water Quality Parameters
Table T2 Groundwater PFAS Analytical Results
Table T3 Surface Water Quality Parameter Results
Table T4 Surface Water PFAS Analytical Results
Table T5 Sediment Observation Results
Table T6 Sediment PFAS Analytical Results
Table T7 Historical Groundwater PFAS Analytical Results
Table T8 Historical Surface Water PFAS Analytical Results
Table T9 Historical Sediment PFAS Analytical Results

Abbreviations

Term	Description
6:2 FtS	6:2 Fluorotelomer Sulfonate
AECOM	AECOM Australia Pty Ltd
AFFF	Aqueous film forming foam
ALS	Australian Laboratory Services
ANZG	Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2018)
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure, as amended (2013)
BOM	Bureau of Meteorology
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved oxygen
DQIs	Data quality indicators
DQOs	Data quality objectives
EC	Electrical conductivity
FOSA	Perfluorooctane sulfonamide
HEPA	Heads of Environmental Protection Agencies
IP	Interface probe
LOR	Limit of reporting
mBTOC	Metres below top of casing
mAHD	Metres Australian Height Datum
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NHMRC	National Health and Medical Research Council
NMI	National Measurement Institute
OMP	Ongoing Monitoring Plan
ORP	Oxidation-reduction potential
PFAS	Per- and poly-fluoroalkyl substances
PFBA	Perfluorobutanoic acid
PFBS	Perfluorobutane sulfonic acid
PFDoDA	Perfluorododecanoic acid
PFHpA	Perfluoroheptanoic acid
PFHpS	Perfluoroheptane sulfonic acid
PFHxA	Perfluorohexanoic acid
PFHxS	Perfluorohexane sulfonate
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate

Term	Description
PFNA	Perfluorononanoic acid
PFPeA	Perfluoropentanoic acid
PFPeS	Perfluoropentane sulfonic acid
PFTrDA	Perfluorotridecanoic acid
PFUnDA	Perfluoroundecanoic acid
PMAP	PFAS Management Area Plan
QA/QC	Quality Assurance/Quality Control
QLD	Queensland
SAQP	Sampling Analysis Quality Plan
SD	Sediment
SW	Surface Water

List of Units

Unit	Definition	Unit	Definition
°C	Degrees Celsius	mg	Milligrams
L	Litre	mm	Millimetre
µS	Microsiemens	cm	Centimetre
kg	Kilogram	mV	Millivolts
m	Metre	µg	Micrograms

1.0 Introduction

1.1 General

AECOM Australia Pty Ltd (AECOM) was engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) outlined in the PFAS Management Area Plan (PMAP) (Department of Defence, 2020) at Lavarack Barracks Townsville (the 'Base') located in the North Queensland Region. The location of the Base and the PFAS Source Areas are shown in **Figure 1** in **Appendix A**. PFAS Source Areas are identified and defined in the PMAP (Department of Defence, 2020). The OMP (Department of Defence, 2020) for Lavarack Barracks includes biannual groundwater, surface water, and sediment sampling events in October 2020, March/April 2021, August 2021, February to April 2022, August to October 2022, March 2023, August 2023, and March 2024.

These sampling events were scheduled to include:

- Groundwater sampling of 29 on-Base wells at Lavarack Barracks and nine off-Base wells in the suburbs of Annandale, Idalia, and Wulguru.
- Sediment sampling at 18 on-Base locations at Lavarack Barracks and 13 off-Base locations in the Ross River and waterways in Annandale and Idalia with co-located surface water sampling when water is present.

A Sampling Analysis and Quality Plan (SAQP Rev 8, AECOM, 2023) was prepared to provide details of the sampling event. Where deviations from the SAQP (AECOM, 2023) occurred, these are noted in this report in **Section 3.7**

This sampling event factual report has been prepared to report the results of the 2023 Dry Season Sampling Event, which was completed from 21 to 25 August 2023. This report specifically highlights first-time detections and/or new exceedances of human health or ecological screening criteria for perfluorooctane sulfonate (PFOS), PFOS + perfluorohexane sulfonate (PFHxS) and / or perfluorooctanoic acid (PFOA).

This report has been prepared in accordance with the *PFAS OMP Factual Report Guidance,* v0.2, May 2021 (Department of Defence, 2021).

1.2 Objectives

The objectives of the OMP program are to:

- Implement the OMP prepared as part of the PMAP.
- Collect data that will enable Defence to maintain an up to date understanding of the distribution, concentration, and transport of PFAS at Lavarack Barracks.

The data collected as part of the scheduled sampling events will assist in the timely identification of risks and inform Defence's approach to the management of PFAS to protect human health and the environment, including updates and revisions to the PMAP.

The objective of this phase of works is to implement the 2023 dry season sampling event scope of works in accordance with the SAQP (AECOM, 2023).

2.0 Scope of Work

The sampling event at the Base was completed in general accordance with the SAQP (AECOM, 2023). In summary, the scope of works for this August 2023 Dry Season sampling event included:

- Review of the SAQP prior to the monitoring event to ensure compliance with relevant Australian guidance and suitable for the proposed sampling.
- Collection of 31 sediment (18 on-Base and 13 off-Base locations) and 24 co-located surface water samples (where water was present) (refer to **Figure 2** and **3**, **Appendix A**). Collection of groundwater samples at 38 locations including 29 on-Base and 9 off-Base locations.
- Collection of groundwater gauging data (at all 38 wells) and water quality parameter data for surface water and groundwater sample locations (where water was present).
- Analysis of all samples for the PFAS suite (28 analytes) at the standard laboratory limit of reporting (LOR).
- Collection of field duplicate and triplicate samples at a rate of 1 in 10 primary samples, one rinsate sample per fieldwork day, and one trip blank per batch analysed for PFAS suite (28 analytes).
- Data management of all OMP field and laboratory data in the Defence ESdat database.
- Preparation of this Sampling Event Factual Report.

Refer tables below for nominated sampling locations as outlined in the SAQP (AECOM, 2023). Deviations from the SAQP are identified in **Section 3.7**.

Table 1 Planned Groundwater Sampling Locations

Source Area	Monitoring Well ID	Total wells
Eastern PFAS Contamination Area	MW018, MW114, MW115, MW116, MW139	5
Former B Squadron	MW135	1
Former Fire Station	MW105, MW128	2
Former Fire Training Area	MW131	1
Former Helicopter Squadron	MW102	1
Lavarack Golf Course and Sporting Fields	MW065, MW120, MW121, MW122, MW123I, MW123S	6
Monocell	MW072, MW074, MW106	3
Stockpile Designated Area 2	MW141	1
Suspected Aqueous Film Forming Foam (AFFF) Disposal Area	MW101	1
Top, Middle and Lower Dams	MW138	1
Base Boundary – On-Base	MW002, MW003, MW118, MW119, MW124, MW125I, MW125S	7
	On-Base Sub-total	**29**
Off-Base	MW205S, MW212, MW217, MW220S, MW226, MW232, MW233, MW235S, MW236S	9
	Total	**38**

Table 2 Planned Surface Water Sampling Locations

Source Area	Surface Water Location ID	Total
Eastern PFAS Contamination Area	SW119, SW121[#]	2
Former Fire Station	SW109, SW110	2
Lavarack Golf Course & Sporting Field	SW129[#], SW130[#]	2
Top, Middle and Lower Dams	SW139, SW140, SW144	3
Remaining on-Base	SW113, SW120[#]	2
Base Boundary	SW126[#], SW128, SW132, SW133[#], SW134, SW135, SW136[#]	7
	On-Base Sub-total	**18**
Off-Base	SW203, SW205, SW211, SW212, SW217, SW220, SW227, SW232, SW233, SW242, SW243, SW244, SW245	13
	Total	**31**

[#] Location was dry during dry season 2023 sampling event and therefore no sample was collected at this location.

Table 3 Planned Sediment Sampling Locations

Source Area	Sediment Location ID	
Eastern PFAS Contamination Area	SD119, SD121	2
Former Fire Station	SD109, SD110	2
Lavarack Golf Course and Sporting Fields	SD129, SD130	2
Top, Middle and Lower Dams	SD139, SD140, SD144	3
Remaining on-Base	SD113, SD120	2
Base Boundary	SD126, SD128, SD132, SD133, SD134, SD135, SD136	7
	On-Base Sub-total	**18**
Off-Base	SD203, SD205, SD211, SD212, SD217, SD220, SD227, SD232, SD233, SD242, SD243, SD244, SD245	13
	Total	**31**

3.0 Methodology

The methodology used for the 2023 dry season sampling event was in general accordance with the SAQP (AECOM, 2023) and is summarised in **Sections 3.1**-**3.3**.

3.1 Groundwater Sampling Methodology

The groundwater sampling methodology is outlined in **Table 4** below.

Table 4 Groundwater Sampling Methodology

Item	Details
Groundwater Gauging	The depth to groundwater was measured in each monitoring well prior to the installation of HydraSleeves™ and immediately prior to collection of groundwater samples using an interface probe (IP).
Water Quality Parameters	Temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation reduction potential (ORP), pH and observations of water quality were recorded using a calibrated water quality meter (results detailed in **Table T1**). Equipment calibration certificates for the water quality meter are provided in **Appendix F**.
Sampling Methodology	Groundwater samples were collected from all monitoring wells using no-purge methodology HydraSleeves™, which were installed within the screened interval of each well (based on a review of the well construction log) for a minimum of 24 hours prior to the sampling round (as detailed in **Table T1**, **Appendix B**). HydraSleeves™ were installed based on measured well depth. Review of the provided ESdat well screen interval information indicates that there are discrepancies between documented well screen interval, recorded well depth and the actual well depth when measured. Therefore, it appears that the HydraSleeves™ may have been installed below the documented screened interval. However, the ESdat well construction details generally state that the bottom screen interval depth equals the well depth. Review of the data and previous results for MW106, MW123I, MW124 and MW125I indicates results are lower than or within the same order of magnitude and water is of similar or comparable condition to previous rounds and therefore considered to be representative of groundwater conditions at these locations For wells without available construction details, HydraSleeves™ were installed at the bottom of the well, consistent with the screened interval for wells installed in the same aquifer. Where the water column was measured to be less than 1.5 m but more than 0.5 m, a top weight was added to the HydraSleeve™ before installation to ensure adequate sample volume could be collected.

3.2 Surface Water Sampling Methodology

The surface water sampling methodology is outlined in **Table 5** below.

Table 5 Surface Water Sampling Methodology

Item	Details
Water Quality Parameters	Temperature, electrical conductivity, dissolved oxygen, oxidation reduction potential, pH and observations of water quality were recorded using a calibrated water quality meter. Equipment calibration certificates for the water quality meter are provided in **Appendix F**.

Item	Details
Sampling Methodology	Samples were collected directly into laboratory supplied containers, from immediately below the water surface, to minimise collection of sediment or floating materials in the samples. Where the waterway could not be accessed from the bank a telescopic sampler with a decontaminated stainless-steel scoop was used to collect the sample. Where required, a boat was used to access some locations of the Ross River. The sample was immediately transferred into new laboratory supplied containers at each sample location, with the cap immediately applied once the container was full.

3.3 Sediment Sampling Methodology

The sediment sampling methodology is outlined in **Table 6** below.

Table 6 Sediment Sampling Methodology

Item	Details
Sampling Methodology	Samples representative of potentially deposited sediments were collected from within the water body (if possible) using a decontaminated steel trowel or gloved hand from the base of drains (where possible). Samples were collected from the surface of the sediment up to a depth of 0.1 m, where this depth was achievable. At each location, a new laboratory supplied container was used for each sample.
Logging	Sediment characteristics were recorded for each sample and are presented in **Table T5**, **Appendix B**

3.4 Quality Assurance / Quality Control and Analysis

The Quality Assurance / Quality Control (QA/QC) requirements and analysis completed for the OMP sampling event are summarised in **Table 7**, below.

Table 7 QA/QC and Analysis for OMP

Item	Details
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e., splits), trip blank samples and rinsate samples. Intra- and inter-laboratory samples were collected at a rate of one per ten primary samples. Trip blanks were prepared in the laboratory by filling sampling containers with laboratory supplied PFAS-free deionised water and were included at a rate of one per batch of samples (excluding private property sampling). Rinsate samples were collected at a rate of one per day of sampling when non-dedicated equipment was used by pouring laboratory supplied PFAS-free deionised water over the decontaminated sampling equipment. Additional sample volume was collected to enable the appropriate laboratory QA/QC for all water samples. Refer to **Appendix C** for assessment of QA/QC sample data.
Sample Analysis	All primary samples were submitted for PFAS suite analysis using the standard levels of detection. Australian Laboratory Services (ALS) Environmental Brisbane, Queensland (QLD) was used as the primary laboratory. Eurofins Brisbane, QLD was used as the secondary laboratory. ALS and Eurofins methods for the required analyses are certified by the National Association of Testing Authorities (NATA). Chain of Custody Forms are presented in **Appendix D**. Laboratory certificates are presented in **Appendix E**.

3.5 Adopted Screening Criteria

Adopted screening criteria references national guidance in the form of the PFAS National Environmental Management Plan (NEMP), Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance. Guidance documents used to assess the dataset include the following:

- PFAS NEMP, Heads of Environmental Protection Agencies (HEPA) (2020).
- Department of Health, 2019. *Health Based Guidance Values for PFAS for use in site investigations in Australia*. April 2017 [updated September 2019].
- National Health and Medical Research Council (NHMRC), 2019. *Guidance on PFAS in Recreational Water*. August 2019 (NHMRC 2019).
- *National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013* (ASC NEPM, 2013).

In accordance with the OMP (Defence, 2020) and SAQP (AECOM, 2023), the adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 8** below.

Table 8 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Off-Base - Drinking Water	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). Where the guideline value refers to the sum of PFOS + PFHxS, this includes PFOS only, PFHxS only and the sum of the two (HEPA, 2020). *All off-Base groundwater results will be compared to these criteria as well as one surface water location (SW245) which is within Townsville's emergency drinking water supply.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater and marine water (95% species protection values)	PFOS	0.13 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All surface water and groundwater results will be compared to these criteria.*
	PFOA	220 µg/L	

There are no current HEPA (2020) endorsed guideline values for PFAS in sediment.

3.6 Data Quality Objectives and Data Validation

The data quality objectives (DQO) and data quality indicators (DQI) adopted for these works are presented in the SAQP (AECOM, 2023).

Data validation assessment is provided in **Appendix C**.

Data validation procedures employed in the assessment of the field and laboratory QA/QC data indicated that the reported analytical results are representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report.

All data collected during August 2023 have been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (DCMM) (Defence, 2018 as amended 2021) Annex L requirements.

3.7 Deviations from the SAQP

Table 9 lists the deviations from the SAQP (AECOM, 2023) during this sampling round.

Table 9 Deviations from the SAQP during 2023 Dry Season Sampling Event

SAQP Deviation	Comment/Justification	Impact on Dataset
Surface water not sampled at SW120, SW121, SW126, SW129, SW130, SW133, and SW136.	No surface water was present.	Nil. The result is reflective of site conditions at the time of monitoring.
HydraSleeves™ installed within screened interval	HydraSleeves™ were installed based on measured well depth. Review of the provided ESdat well screen interval information indicates that there are discrepancies between documented well screen interval, recorded well depth and the actual well depth when measured. Therefore, it appears that the HydraSleeves™ may have been installed below the documented screened interval. However, the ESdat well construction details generally state that the bottom screen interval depth equals the well depth.	Review of the data and previous results for MW106, MW123I, MW124 and MW125I indicates results are lower than or within the same order of magnitude and water is of similar or comparable condition to previous rounds and therefore considered to be representative of groundwater conditions at these locations.

4.0 Field Observations and Results

The 2023 dry season sampling event was completed between 21 and 25 August 2023.

Details on weather conditions and estate management works or training activities during the sampling event are recorded in **Table 10**.

Table 10 Weather Conditions and Estate Activities at Time of Sampling

Item	Observations
Weather Conditions	The Bureau of Meteorology (BOM) (BOM, 2023) reported the following monthly rainfall data leading up to and during the 2023 dry season sampling event at Bureau Station 032195 Mount Stuart (Defence): • April 2023: 15.6 mm • May 2023: 0.2 mm • June 2023: 0.0 mm • July 2023: Not reported • August 2023: 0.0 mm Weather was generally hot and dry, mixed with some humid periods during the sampling program in August 2023. The conditions monitored were representative of dry season conditions within the Management Area.
Estate Management Works or Training Activities	There were no soil disturbance activities, estate management works, or training exercises identified during the sampling event which impacted access to sample groundwater, surface water, and sediment locations.

The results of the sampling event are summarised in **Sections 4.1**-**4.3**.

4.1 Groundwater

4.1.1 Observations and Field Measurements

Table 11 Groundwater Observations and Field Measurements

Item	Observations
Access	All monitoring wells were accessible.
Monitoring Well Network	All monitoring wells were observed to be in good serviceable condition except for MW115 which has a bend in the casing approximately 0.75 metres below top of casing (mBTOC). A HydraSleeve™ was deployed at MW115 without a collar and was able to be sampled. It was identified that the recorded screen interval at MW102 and MW205S was deeper than the measured well depth. Following review of the data for MW102 and MW205S, the results were found to be consistent with the historical results for these locations, and as sampling was still conducted within the screen intervals, the samples collected during the 2023 dry season sampling event are considered representative of the groundwater conditions at these locations.
Field Observations	Groundwater from MW236S had a weak organic odour, consistent with the previous round of sampling. Groundwater colour was typically recorded as clear. Red / brown coloured groundwater was observed at MW212 and MW217. Light brown coloured groundwater was observed at MW115. Brown coloured groundwater was observed at MW123S. Grey / brown coloured groundwater was observed at MW236S. Light grey groundwater was observed at MW226 and MW235S.

Item	Observations
	Turbidity was typically recorded as clear, with low turbidity observed at MW220S, MW232, MW212, MW115, MW226, MW003, MW205S, and MW233. Medium turbidity was observed at MW236S, MW217, and MW235S. Turbid water was observed at MW123S. No visible or olfactory indications of contamination were observed during the sampling round. Field observations are presented **Table T1** in **Appendix B**.
Depth to Groundwater	Depth to groundwater ranged between 0.632 (MW232) and 5.925 (MW205S) mBTOC. It is noted that multiple groundwater systems are present across the Management Area. Groundwater elevations within the shallow (alluvial) aquifer were between 0.475 (MW205S) and 25.38 (MW141) metres Australian Height Datum (mAHD). Groundwater elevations within the deeper (rock) aquifer were between 7.674 (MW115) and 19.083 (MW106) mAHD. Groundwater gauging data are presented in **Table T1** in **Appendix B**.
Groundwater Flow Direction	Groundwater contours and inferred groundwater flow directions in August 2023 are shown on **Figure 4** in **Appendix A**. The inferred local groundwater flow direction for the shallow aquifer is to the north. Monitoring wells MW003, MW106, MW115, MW119, MW123I, MW125I, which are in the deeper aquifer or the tidally influenced wells MW235S, MW236S, MW205S, MW220S, MW232 have been removed from the contours. Monitoring wells MW074, MW105 and MW128 were removed from the calculation of groundwater contours as they were identified to have incorrect survey data. MW226 was not included in **Figure 4** as this is located on private property and the landholder opted out for showing locations on figures this sampling round.
Water Quality Parameters	Groundwater quality parameters were measured at the time of sampling. The readings are presented in **Table T1** in **Appendix B** and are summarised below, covering all sampling completed: • DO results ranged between 0.42 mg/L (MW128) to 3.34 mg/L (MW226) indicating poorly to moderately oxygenated conditions across the Management Area. • EC ranged from 783 µS/cm (MW115) to 29,788 µS/cm (MW232) indicating fresh to saline conditions across the Management Area. • pH ranged from 6.06 (MW220S) to 7.52 (MW065). pH results generally indicated slightly acidic to slightly alkaline conditions across the Management Area. • ORP ranged from 25.1 mV (MW115) to 400.1 mV (MW116) indicating weakly to moderately oxidising conditions. • Temperature ranged from 24.6 °C (MW217) to 31.4 °C (MW074). These results are generally consistent with the groundwater quality parameters from the previous five groundwater monitoring rounds since wet season 2021.

4.1.2 Groundwater Analytical Results

Of the 38 groundwater wells sampled during this event, 36 samples reported concentrations of PFAS at or above the laboratory LOR. PFAS was not detected in groundwater at MW124 and MW212. The PFAS groundwater analytical results from this sampling event are presented in **Table T2** in **Appendix B**.

There were no first-time detections of PFOS, PFOA, or PFOS + PFHxS. There was one new exceedances of the human health drinking water guideline (0.07 µg/L for PFOS + PFHxS) at off-Base location MW233 during the sampling event.

One of the nine samples collected off-Base and 19 on-Base samples, exceeded the adopted ecological guideline for PFOS. Five of the nine samples collected off-Base exceeded the human health drinking

water guideline for PFOS + PFHxS. There were no on- or off-Base exceedances of the PFOA ecological guideline in groundwater.

New historical maximums were detected at the following locations during the August 2023 sampling round:

Table 12 Locations of new historical maximums for groundwater

Compound	Location	
	On Base	Off Base
PFOS	MW105, MW106, MW118, MW121, MW125S	MW233
PFHxS	MW105, MW125S	MW233
PFOA	MW105, MW119, MW114, MW125S, MW128	-
PFOS + PFHxS	MW105, MW106, MW116, MW118, MW125S	MW233

Groundwater sampling results were generally within the same order of magnitude as historically reported concentrations.

Historical groundwater results are presented in **Table T7**, **Appendix B.**

4.2 Surface Water

4.2.1 Observations and Field Measurements

Table 13 Surface Water Observations and Field Measurements

Item	Observations
Access	All surface water locations were accessible during the August 2023 sampling event however the following locations couldn't be sampled: • SW120, SW121, SW126, SW129, SW130, SW133, and SW136 were dry.
Field Observations	A slight biological sheen was observed at SW110 and SW232. Surface water on-Base was observed to be generally light olive brown. Clear surface water was observed at SW140. Yellowish brown surface water was observed at SW132. Surface water off-Base was observed to be generally light olive brown. Yellowish brown surface water was observed at SW203 and SW233. Dark olive brown surface water was observed at SW205. Dark olive grey surface water was observed at SW242. Olive yellow surface water was observed at SW211. Clear surface water was observed at SW227, SW244, and SW245. No other visible or olfactory indications of contamination were observed during the sampling of the surface water locations. Field observations are presented **Table T3** in **Appendix B**.
Water Quality Parameters	Surface water quality parameters were measured at the time of sampling. Readings are presented in **Table T3** in **Appendix B** and are summarised below: • DO results ranged between 2.54 mg/L (SW109) and 10.23 mg/L (SW119) indicating moderately to well oxygenated conditions. • EC ranged from 207 µS/cm (SW245) to 33,531 µS/cm (SW232) indicating relatively fresh conditions in urban runoff areas and saline conditions in areas with tidal connectivity. • pH ranged from 6.85 (SW203) to 8.67 (SW119). pH results generally indicated slightly acidic to slightly alkaline conditions.

Item	Observations
	• Corrected ORP ranged from 237.8 mV (SW119) to 439.4 mV (SW211) indicating mildly to moderately oxidising conditions. • Temperature ranged from 19.1°C (SW211) to 28.6°C (SW134).

4.2.2 PFAS Surface Water Analytical Results

Of the 24 surface water samples collected, 18 reported concentrations of PFAS above the laboratory LOR. The PFAS surface water analytical results from this sampling event are presented in **Table T4** in **Appendix B**. There were no first-time detections or new exceedances of PFOS, PFOA or sum of PFOS + PFHxS.

PFOS concentrations in seven on-Base samples and four off-Base samples exceeded the adopted ecological guidelines for PFOS. Sum of PFOS + PFHxS concentrations in five on-Base samples and one off-Base sample exceeded the human health recreational guideline.

New historical maximums were recorded at the following locations during the August 2023 sampling round:

Table 14 Locations of new historical maximums for surface water.

Compound	Location	
	On Base	Off Base
PFOS	SW132, SW140	SW220, SW242
PFHxS	SW132, SW140	SW220
PFOA	SW132	SW220
PFOS + PFHxS	SW132, SW140	SW220

Historical surface water results are presented in **Table T8**, **Appendix B**.

4.3 Sediment

4.3.1 Observations and Field Measurements

Table 15 Sediment Observations

Item	Observations
Access	During the August 2023 sampling event, sediment was collected at all 31 sampling locations.
Field Observations	An organic odour was noted at SD119. No visible or olfactory indications of contamination were observed during the sampling of the sediment locations. Sediment logging and observation data are presented in **Table T5**, **Appendix B**.

4.3.2 PFAS Sediment Analytical Results

Of the 31 sediment samples collected, 17 on-Base and nine off-Base samples reported concentrations of PFAS above the laboratory LOR. There are no endorsed human health or ecological guideline values available for sediment. The PFAS sediment analytical results from this sampling event are presented in **Table T6** in **Appendix B**.

There was one first-time detection of PFOA at an on-Base sediment location (SD129). There were two first-time detections of PFOA (close to the LOR) at off-base sediment locations (SD217 and SD232). There are currently no sediment guidelines for PFAS.

The following locations recorded historical maximum concentrations during the August 2023 sampling round:

Table 16 New historical maximum locations for sediment.

Compound	Location	
	On Base	Off Base
PFOS	SD110, SD119, SD129	SD205, SD242
PFHxS	SD110, SD119, SD129	SD217, SD233, SD242
PFOA	SD109, SD110, SD119, SD129	SD217, SD232, SD233
PFOS + PFHxS	SD110, SD119, SD129	SD217, SD242

Historical sediment results are presented in **Table T9**, **Appendix B**.

5.0 Summary and Next Sampling Event

5.1 Summary of Sampling Event

The routine OMP Dry Season Sampling Event was undertaken at the Base between 21 and 25 August 2023. This dry season sampling event included sampling from 38 groundwater monitoring locations, 24 surface water monitoring locations and 31 sediment monitoring locations.

Table 17 summarises the findings of the August 2023 sampling events and the recommended actions.

Table 17 Summary of Sampling Event

Item	Comment	Recommended Actions
Access to sampling locations	All groundwater monitoring wells, surface water and sediment locations were accessible during the dry season monitoring event.	Ongoing monitoring in accordance with the OMP.
Surface Water: Dry/insufficient water to sample	During the August 2023 sampling event, surface water was not present at seven monitoring locations: • SW120 • SW121 • SW126 • SW129 • SW130 • SW133 • SW136	Ongoing monitoring in accordance with the OMP.
Analytical Results	PFAS were detected at or above the laboratory LOR in 36 of the 38 groundwater samples, 18 of the 24 surface water samples and 26 of the 31 sediment samples analysed.	Ongoing monitoring in accordance with the OMP.
First-time detections and **new exceedances**.	Groundwater: there were no first-time detections of PFOS, PFOS + PFHxS or PFOA. One new exceedances of the human health drinking water guideline for PFOS + PFHxS was recorded at MW233. Surface water: there were no first-time detections of PFOS, PFOS + PFHxS and PFOA and no new exceedances. Sediment: there were three first time detections of PFOA (SD129, SD217, SD232) and no new exceedances.	Ongoing monitoring in accordance with the OMP.
New historical maximums	New historical maximum concentrations of PFOS, PFOS + PFHxS, or PFOA were detected at the following locations: Groundwater: MW118, MW119, MW125S, MW114, MW116, MW105, MW128, MW121, MW106, and MW233. Surface water: SW132, SW140, SW220, and SW242. Sediment: SD119, SD110, SD205, SD233, SD109, SD129, SD217, SD232, and SD242.	Ongoing monitoring in accordance with the OMP.

5.2 Upcoming Sampling Events

The next biannual sampling event is scheduled for March 2024.

5.3 Upcoming Ongoing Monitoring Interpretive Report

The next ongoing monitoring interpretive report is scheduled for June 2024.

6.0 References

AECOM. (2023). PFAS OMP Lavarack Barracks Sampling and Analysis Quality Plan, Rev 8, 03 August.

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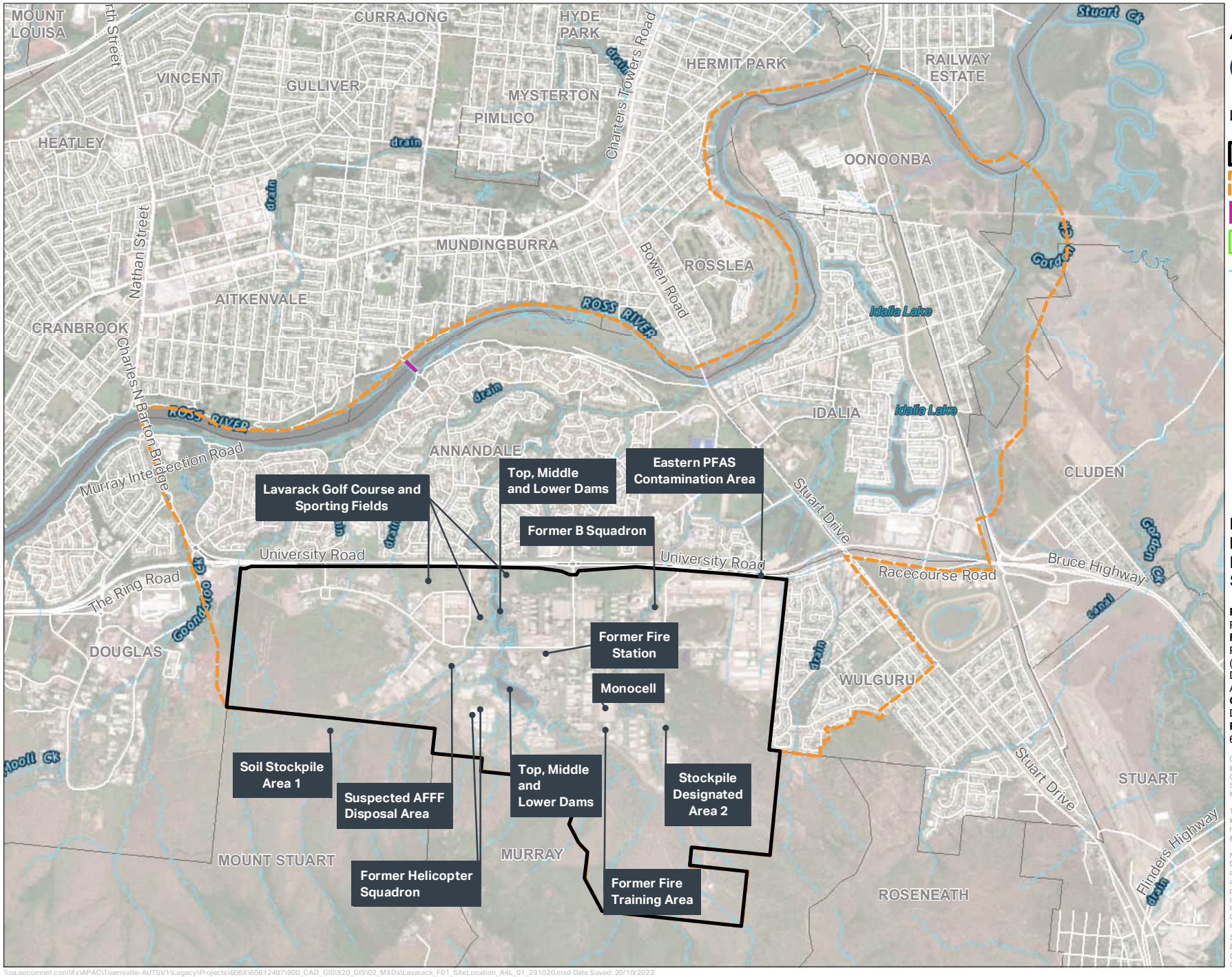
Appendix A

Figures



AECOM

N

0 390 780 m

Legend

- Base Boundary
- Management Area
- Aplin's Weir
- Source Areas
- Watercourses

FIGURE 1:
LAVARACK BARRACKS LOCATION AND SOURCE AREAS

PROJECT NAME:
PFAS OMP
REPORT NAME:
PFAS OMP – Lavarack Barracks (0229) Townsville,
Dry Season Sampling Factual Report
August 2023
CLIENT NAME:
Department of Defence
PROJECT NUMBER:
60612487

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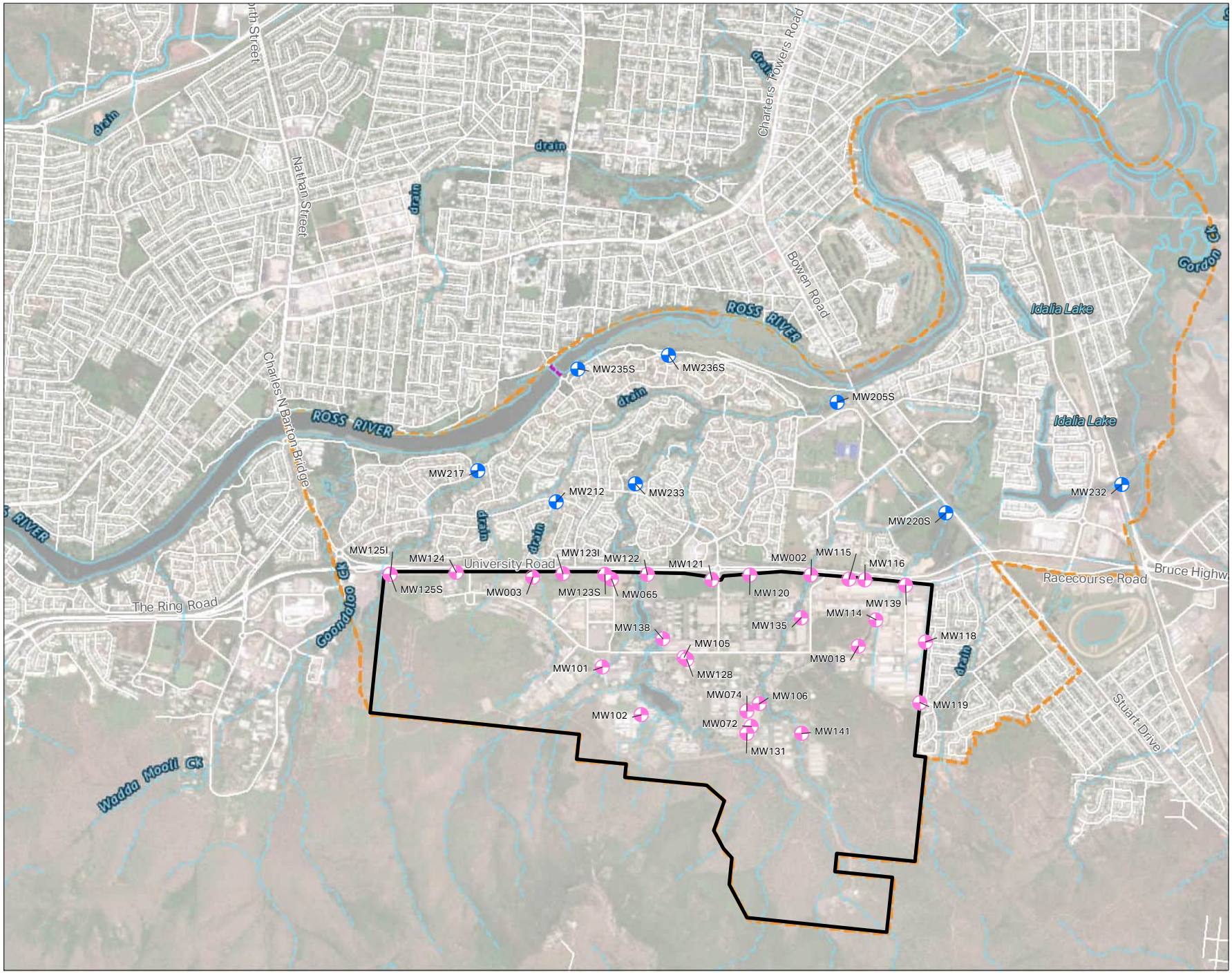

AECOM

N

0 390 780 m

Legend

- Property Boundary
- Management Area
- Aplin's Weir
- Source Areas
- Watercourses
- On-Base Monitoring Well
- Off-Base Monitoring Well

FIGURE 2: GROUNDWATER MONITORING LOCATIONS

PROJECT NAME:
PFAS OMP
REPORT NAME:
PFAS OMP – Lavarack Barracks (0229) Townsville, Dry Season Sampling Factual Report August 2023
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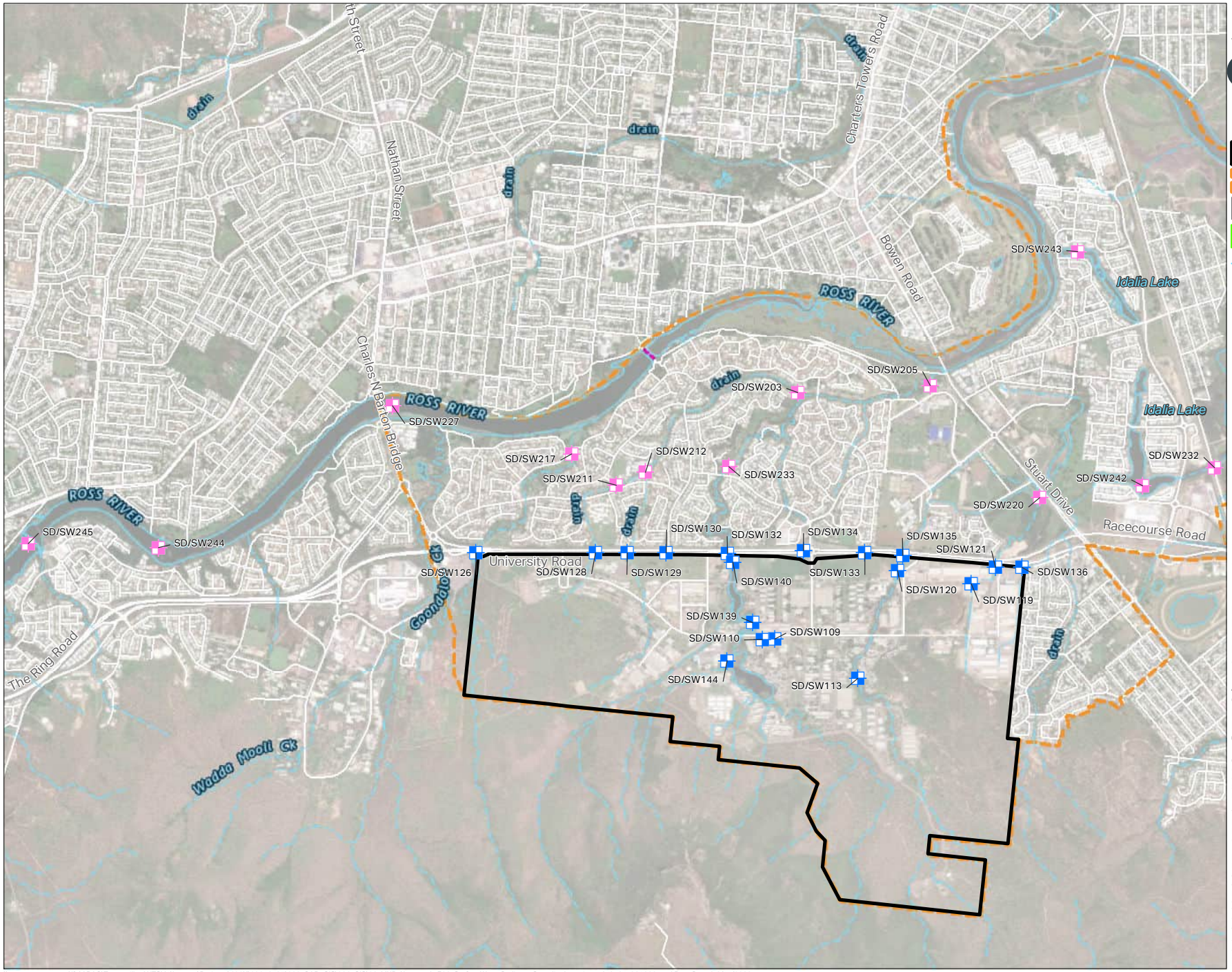

AECOM

N

0 350 700 m

Legend

- Property Boundary
- Management Area
- Aplin's Weir
- Source Areas
- Watercourses
- On-Base Co-located Surface Water and Sediment Sample Location
- Off-Base Co-located Surface Water and Sediment Sample Location

FIGURE 3: SURFACE WATER AND SEDIMENT MONITORING LOCATIONS

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PFAS OMP
REPORT NAME:
PFAS OMP – Lavarack Barracks (0229) Townsville,
Dry Season Sampling Factual Report
August 2023
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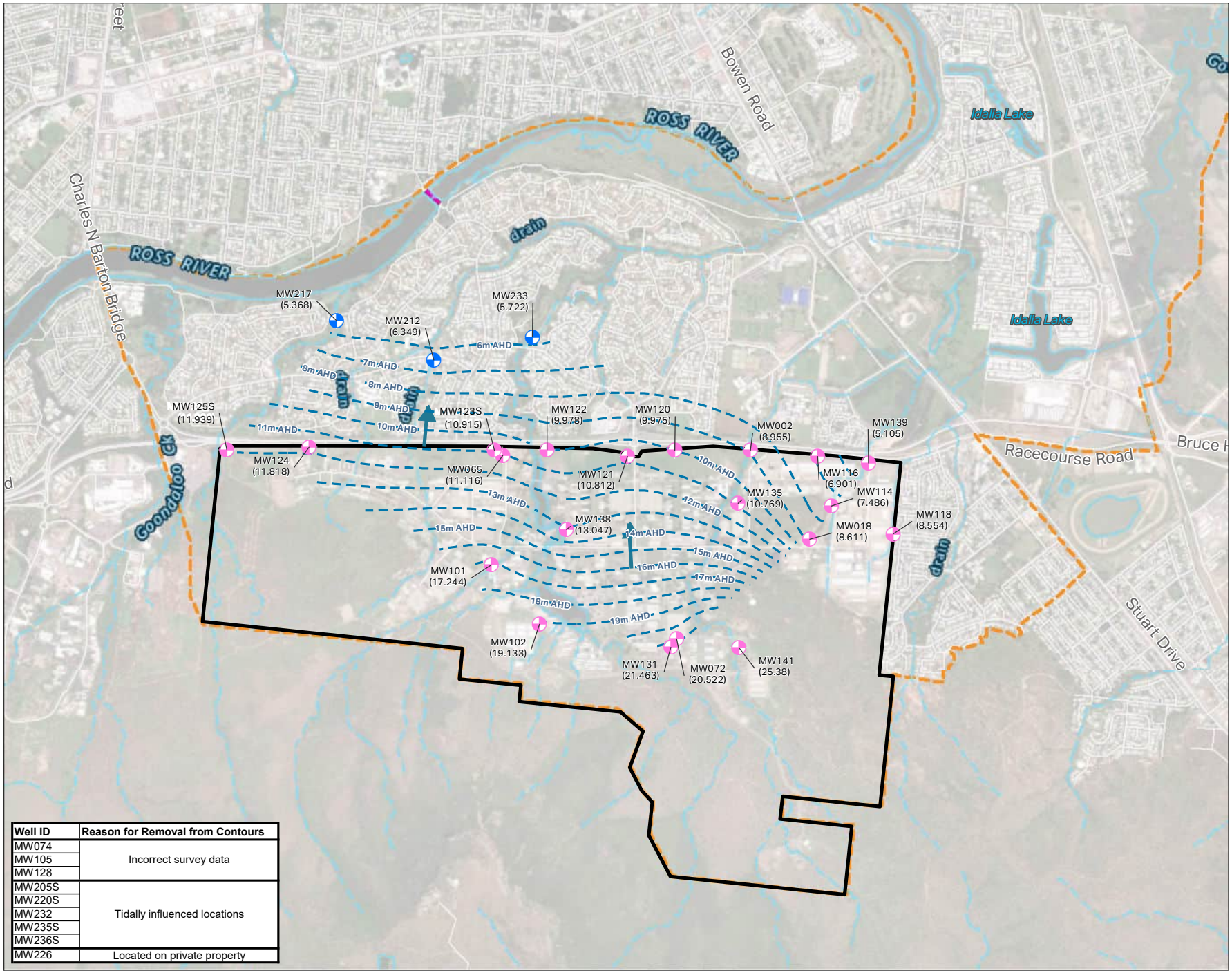

Well ID	Reason for Removal from Contours
MW074	Incorrect survey data
MW105	
MW128	
MW205S	Tidally influenced locations
MW220S	
MW232	
MW235S	
MW236S	
MW226	Located on private property

AECOM

N

0 320 640 m

Legend

- Property Boundary
- Groundwater Monitoring Well select
- Management Area
- Aplin's Weir
- Watercourses
- Groundwater Contour
- Inferred Groundwater Flow Direction
- On-Base Monitoring Well
- Off-Base Monitoring Well

Note: All elevations are in m AHD. Some elevations were unable to be plotted due to a data error

FIGURE 4: INFERRED GROUNDWATER CONTOURS- SHALLOW AQUIFER (ALLUVIUM) DRY SEASON - AUGUST 2023

PROJECT NAME:
PFAS OMP
REPORT NAME:
PFAS OMP – Lavarack Barracks (0229) Townsville,
Dry Season Sampling Factual Report

August 2023
CLIENT NAME:
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PROJECT NUMBER:
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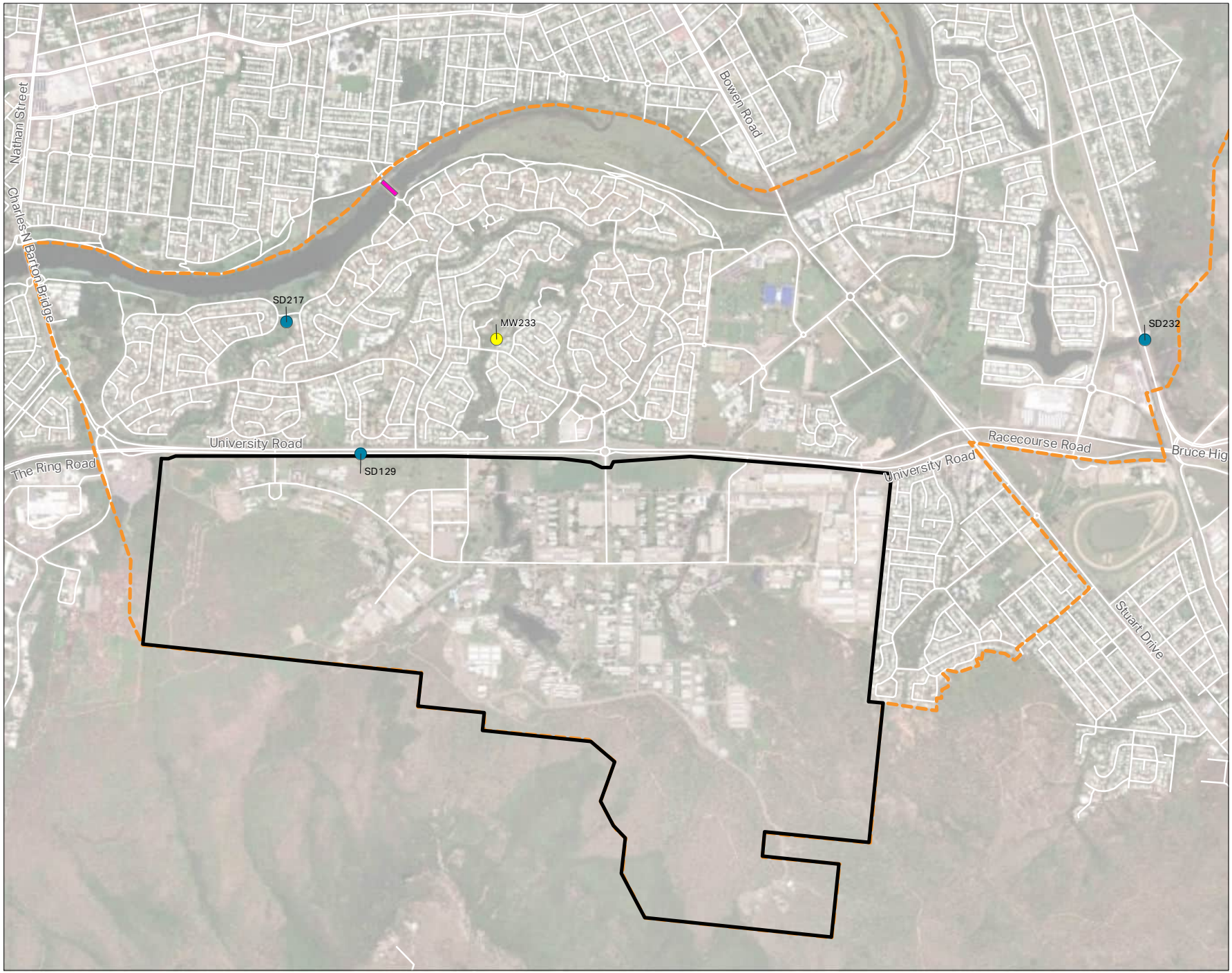

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Legend

- Management Area
- Sub-Management Area Boundary
- Aplin's Weir
- First time detection of PFOA
- New exceedance of the human health drinking water guideline for PFOS + PFHxS

FIGURE 5:
FIRST-TIME DETECTIONS OR NEW EXCEEDANCES OF PFOS + PFHXS, PFOS OR PFOA

PROJECT NAME:
PFAS OMP
REPORT NAME:
PFAS OMP – Lavarack Barracks (0229) Townsville,
Dry Season Sampling Factual Report
August 2023
CLIENT NAME:
Department of Defence
PROJECT NUMBER:
60612487

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Appendix B

Analytical Tables

Location Code	HydraSleeve™ Installation Date	Gauging Date	Gauging Time	Sample Date	Well Screen Depths (mbtoc)	Previous Well Depth (mbtoc)	Well Depth (mbtoc)	Depth to Water (mbtoc)	Aquifer	HydraSleeve™ Installation Depth (mbTOC)*	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Condition of Well	DO (mg/L)	EC (µS/cm)	pH	Redox (mV)	Corrected Redox (mV)	Temp (°C)	Turbidity	Water Colour	Odour	Sheen	Sample Method/Comments
Eastern PFAS Contamination Area																								
MW018	21/08/2023	23/08/2023	1120	23/08/2023	Not available in ESdat	9.040	9.025	3.819	Shallow	7.725	12.43	8.611	Good	0.71	22831	6.95	136.7	330.7	29.3	Clear	Clear	No odour	No sheen	HydraSleeve™
MW114	23/08/2023	23/08/2023	1425	24/08/2023	Not available in ESdat	5.540	6.682	1.414	Shallow	5.382	8.9	7.486	Good	1.26	18357	7.35	117.9	311.9	26.5	Clear	Clear	No odour	No sheen	HydraSleeve™
MW115	21/08/2023	23/08/2023	1450	24/08/2023	12.7 - 15.7	15.740	15.670	2.086	Deep	14.370	9.76	7.674	Good	0.52	783	6.91	-168.9	25.1	26.9	Low	Light Brown	No odour	No sheen	HydraSleeve™ without collar. Casing bent approximately 0.75 mbTOC.
MW116	21/08/2023	23/08/2023	1500	24/08/2023	5 - 8	7.920	8.932	1.709	Shallow	7.632	8.61	6.901	Good	1.67	12148	7.06	206.1	400.1	27.3	Clear	Clear	No odour	No sheen	HydraSleeve™
MW139	23/08/2023	23/08/2023	1438	24/08/2023	2.8 - 5.8	5.730	5.801	1.425	Shallow	4.501	6.53	5.105	Good	0.55	9315	6.65	-77.8	116.2	27.7	Clear	Clear	No odour	No sheen	HydraSleeve™
Former B Squadron																								
MW135	23/08/2023	23/08/2023	1412	24/08/2023	3 - 6	6.365	5.895	4.191	Shallow	4.595	14.96	10.769	Good	0.44	3685	6.42	92.3	286.3	29.5	Clear	Clear	No odour	No sheen	HydraSleeve™
Former Fire Station																								
MW105	23/08/2023	23/08/2023	1510	24/08/2023	3 - 6	6.290	6.338	2.262	Shallow	5.038	21.2	18.938	Good	0.76	4909	7.06	104.8	298.8	27.3	Clear	Clear	No odour	No sheen	HydraSleeve™
MW128	23/08/2023	23/08/2023	1515	24/08/2023	2.6 - 5.6	5.470	5.458	2.501	Shallow	4.158	21.28	18.779	Good	0.42	2297	7.35	101.8	295.8	26.5	Clear	Clear	No odour	No sheen	HydraSleeve™
Former Fire Training Area																								
MW131	23/08/2023	23/08/2023	1600	25/08/2023	5.4 - 8.4	8.690	8.751	3.777	Shallow	7.451	25.24	21.463	Good	0.78	1289	6.7	118.6	312.6	27.6	Clear	Clear	No odour	No sheen	HydraSleeve™
Former Helicopter Squadron																								
MW102	23/08/2023	23/08/2023	1250	24/08/2023	8.5 - 14.5	9.810	9.836	3.737	Shallow	8.536	22.87	19.133	Good	0.85	9916	7.26	39.5	233.5	28.9	Clear	Clear	No odour	No sheen	HydraSleeve™
Lavarack Golf Course & Sporting Field																								
MW065	23/08/2023	23/08/2023	1045	24/08/2023	1.5 - 6	6.490	6.495	2.304	Shallow	5.195	13.42	11.116	Good	0.7	5319	7.52	96.5	290.5	28.7	Clear	Clear	No odour	No sheen	HydraSleeve™
MW120	23/08/2023	23/08/2023	1400	24/08/2023	4 - 7	7.580	7.612	3.345	Shallow	6.312	13.32	9.975	Good	1.7	4505	6.87	-5.2	188.8	26.8	Clear	Clear	No odour	No sheen	HydraSleeve™
MW121	23/08/2023	23/08/2023	1345	24/08/2023	2.5 - 5.8	6.390	6.442	2.858	Shallow	5.142	13.67	10.812	Good	0.91	7192	7.26	112.1	306.1	26.8	Clear	Clear	No odour	No sheen	HydraSleeve™
MW122	23/08/2023	23/08/2023	1155	24/08/2023	9.3 - 16.3	16.900	17.043	4.462	Deep	15.743	14.44	9.978	Good	0.96	2799	6.8	98.0	292.0	27.1	Clear	Clear	No odour	No sheen	HydraSleeve™
MW123I	23/08/2023	23/08/2023	1030	24/08/2023	5.8 - 8.8	10.130	10.104	2.761	Deep	8.804	14.04	11.279	Good	0.85	26924	6.56	99.1	293.1	27.5	Clear	Clear	No odour	No sheen	HydraSleeve™
MW123S	23/08/2023	23/08/2023	1040	24/08/2023	1 - 5	5.470	5.463	2.565	Shallow	4.163	13.48	10.915	Good	0.95	3871	7.43	67.5	261.5	27.3	Turbid	Brown	No odour	No sheen	HydraSleeve™
Monocell																								
MW072	23/08/2023	23/08/2023	1545	25/08/2023	Not available in ESdat	7.930	7.985	4.908	Shallow	6.685	25.43	20.522	Good	0.72	2003	6.82	106.2	300.2	29.4	Clear	Clear	No odour	No sheen	HydraSleeve™
MW074	23/08/2023	23/08/2023	1550	25/08/2023	Not available in ESdat	7.120	7.144	3.795	Shallow	5.844	Not available in ESdat	-	Good	0.69	2741	7.12	117.8	311.8	31.4	Clear	Clear	No odour	No sheen	HydraSleeve™
MW106	23/08/2023	23/08/2023	1525	25/08/2023	2.5 - 8.5	10.140	10.185	4.757	Deep	8.885	23.84	19.083	Good	1.65	2425	6.89	121.7	315.7	26.7	Clear	Clear	No odour	No sheen	HydraSleeve™
Former B Squadron																								
MW141	23/08/2023	23/08/2023	1610	25/08/2023	Not available in ESdat	8.815	8.844	2.810	Shallow	7.544	28.19	25.38	Good	0.49	1532	6.61	131.0	325.0	27.5	Clear	Clear	No odour	No sheen	HydraSleeve™
Suspected AFFF Disposal Area																								
MW101	23/08/2023	23/08/2023	1235	24/08/2023	5 - 9	6.870	8.829	3.986	Shallow	7.529	21.23	17.244	Good	0.5	1240	6.6	-127.4	66.6	28.5	Clear	Clear	No odour	No sheen	HydraSleeve™
Former Fire Station																								
MW138	23/08/2023	23/08/2023	1220	24/08/2023	6 - 9	9.070	9.156	3.443	Shallow	7.856	16.49	13.047	Good	1.11	3724	6.93	118.3	312.3	28	Clear	Clear	No odour	No sheen	HydraSleeve™
Base Boundary																								
MW002	21/08/2023	23/08/2023	1445	24/08/2023	Not available in ESdat	5.230	5.205	2.395	Shallow	3.905	11.35	8.955	Good	1.23	867	6.76	202.9	396.9	25.1	Clear	Clear	No odour	No sheen	HydraSleeve™
MW003	23/08/2023	23/08/2023	0940	24/08/2023	Not available in ESdat	30.830	30.818	3.632	Deep	29.518	13.95	10.318	Good	0.58	8400	7.03	-23.8	170.2	27.2	Low	Clear	No odour	No sheen	HydraSleeve™
MW118	23/08/2023	23/08/2023	1705	25/08/2023	3 - 6	6.010	6.085	1.986	Shallow	4.785	10.54	8.554	Good	0.81	5137	7.22	42.6	236.6	27	Clear	Clear	No odour	No sheen	HydraSleeve™
MW119	24/08/2023	23/08/2023	1710	25/08/2023	5.4 - 10.4	10.410	10.483	4.06	Deep	9.183	18.78	14.72	Good	0.47	4821	6.89	100.8	294.8	27.3	Clear	Clear	No odour	No sheen	HydraSleeve™
MW124	23/08/2023	23/08/2023	0915	24/08/2023	3 - 6	7.880	7.845	2.592	Shallow	6.545	14.41	11.818	Good	0.81	26299	6.72	6.9	200.9	28.7	Clear	Clear	No odour	No sheen	HydraSleeve™
MW125I	23/08/2023	23/08/2023	0845	24/08/2023	14.2 - 20.2	22.160	21.922	4.812	Shallow	20.622	16.67	11.858	Good	0.7	5319	6.53	65.9	259.9	28.3	Clear	Clear	No odour	No sheen	HydraSleeve™
MW125S	23/08/2023	23/08/2023	0855	24/08/2023	3.8 - 6.8	7.710	7.710	4.741	Shallow	6.410	16.68	11.939	Good	2.08	5013	6.87	44.8	238.8	31	Clear	Clear	No odour	No sheen	HydraSleeve™
Off-Base																								
MW205S	22/08/2023	23/08/2023	0900	24/08/2023	8 - 11	8.800	8.878	5.925	Shallow	7.578	6.4	0.475	Good	2.26	26663	6.77	64.3	258.3	26.3	Low	Clear	No odour	No sheen	HydraSleeve™
MW212	22/08/2023	23/08/2023	0810	24/08/2023	6 - 9	8.860	8.863	1.961	Shallow	7.563	8.31	6.349	Good	1.73	1447	6.84	45.1	239.1	25.9	Low	Red / Brown	No odour	No sheen	HydraSleeve™
MW217	22/08/2023	23/08/2023	0820	24/08/2023	3 - 6	5.450	5.391	1.982	Shallow	4.091	7.35	5.368	Good	2.18	11742	6.18	15.2	209.2	24.6	Medium	Red / Brown	No odour	No sheen	HydraSleeve™
MW220S	22/08/2023	23/08/2023	0920	24/08/2023	2 - 5	6.020	6.051	1.711	Shallow	4.751	3.75	2.039	Good	1.48	29539	6.06	14.8	208.8	24.8	Low	Clear	No odour	No sheen	HydraSleeve™
MW226	23/08/2023	23/08/2023	0730	24/08/2023	Not available in ESdat	5.850	5.852	0.724	Shallow	4.552	Not available in ESdat	-	Good	3.34	11471	6.8	-77.6	116.4	25.1	Low	Light Grey	No odour	No sheen	HydraSleeve™
MW232	22/08/2023	23/08/2023	0940	24/08/2023	1 - 4	3.030	3.474	0.632	Shallow	2.174	2.31	1.678	Good	1.82	29788	6.51	6.7	200.7	24.7	Low	Clear	No odour	No sheen	HydraSleeve™
MW233	22/08/2023	23/08/2023	0830	24/08/2023	4.2 - 7.2	7.560	7.556	1.148	Shallow	6.256	6.87	5.722	Good	1.97	1901	7.16	19.2	213.2	25.3	Low	Clear	No odour	No sheen	HydraSleeve™
MW235S	22/08/2023	23/08/2023	0840	24/08/2023	4.1 - 8.1	7.940	8.054	5.314	Shallow	6.754	7.08	1.766	Good	2.29	1417	6.6	73.9	267.9	27.3	Medium	Light Grey	No odour	No sheen	HydraSleeve™
MW236S	22/08/2023	23/08/2023	0850	24/08/2023	4 - 7	6.920	6.937	4.953	Shallow	5.637	6.53	1.577	Good	2.02	1135	6.53	-32.1	161.9	26.1	Medium	Grey / Brown	Organic odour	No sheen	HydraSleeve™

mbtoc - metres below top of casing
TOC - top of casing
mAHD - metres above Australian Height Datum
DO - Dissolved Oxygen
EC - Electrical Conductivity
Redox - Redox Oxidation Potential
Temp - Temperature
mg/L - milligrams per litre

µS/cm - microsiemens per centimetre
°C - degrees Celcius
"-" denotes no analysis recorded
mV - millivolt
* Depth at which collar of the HydraSleeve was installed. Length of HydraSleeve = 1.3 m

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Table T2: Groundwater PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

		PFAS Full Suite																														
		4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoropentanoic acid (PFPeA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic Acid (PFOA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFOS + PFHxS	Sum of PFAS
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.05	0.05	0.05	0.05	0.05	0.02	0.05	0.02	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.01	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.01	0.01
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location	**Sample ID**	**Sampled Date**																														
Eastern PFAS Contamination Area																																
MW018	0229_MW018_230823	23/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.08	0.67	0.04	***1.47***	<0.02	<0.2	0.2	0.02	0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.14	2.66
MW114	0229_MW114_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	3.14	3.57	18	0.82	***3.97***	<0.02	1.2	7.72	1.61	1.49	2.39	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	22	43.9
MW115	0229_MW115_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.07	0.42	<0.02	***0.14***	<0.02	<0.1	0.14	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.56	0.91
MW116	0229_MW116_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	0.03	0.16	<0.02	0.02	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.18	0.41
MW139	0229_MW139_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.11	1.1	0.05	***2.15***	<0.02	<0.1	0.08	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	3.25	3.62
Former B Squadron																																
MW135	0229_MW135_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.07	0.51	0.03	***0.42***	<0.02	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.93	1.11
Former Fire Station																																
MW128	0229_MW128_230824	24/08/2023	<0.1	0.4	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	6.77	9.38	61.6	2.81	***37.6***	<0.1	0.8	15.6	2.79	1.68	3.1	<0.1	<0.1	0.3	<0.25	<0.1	<0.1	99.2	143
MW105	0229_MW105_230824	24/08/2023	<0.96	<0.96	1.53	<0.96	<2.39	<0.96	<2.39	5.16	<2.39	<0.96	<2.39	34.5	40.6	419	35.9	***786***	<0.96	5.3	99	14.8	10.2	32.7	<0.96	<0.96	2.48	<2.39	<0.96	<0.96	1200	1490
Former Fire Training Area																																
MW131	0229_MW131_230825	25/08/2023	<0.1	0.5	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	5.1	4.48	27.4	1.38	***36.2***	<0.1	1.5	13.1	2.1	1.87	3.35	<0.1	<0.1	<0.1	<0.24	<0.1	<0.1	63.6	97
Former Helicopter Squadron																																
MW102	0229_MW102_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.42	0.34	1.85	0.16	***1.92***	<0.02	<0.1	0.32	0.11	0.08	0.19	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	3.77	5.39
Lavarack Golf Course & Sporting Field																																
MW065	0229_MW065_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.52	0.73	9.73	0.46	***9.93***	<0.02	<0.1	2.29	0.34	0.17	0.33	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	19.7	24.5
MW120	0229_MW120_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.04	<0.02	0.12	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.16	0.19
MW121	0229_MW121_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.04	0.3	<0.02	0.11	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.41	0.49
MW122	0229_MW122_230824	24/08/2023	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.18	0.16	1.14	0.1	***3.56***	<0.02	0.1	0.15	0.04	0.03	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	4.7	5.62
MW123I	0229_MW123I_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.21	0.14	0.41	<0.02	<0.01	<0.02	<0.1	0.07	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.41	0.83
MW123S	0229_MW123S_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.78	0.74	6.93	0.81	***5.08***	<0.02	<0.1	0.76	0.14	0.12	0.44	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	12	15.8
Monocell																																
MW072	0229_MW072_230825	25/08/2023	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	5.66	5.44	39.3	2.26	***50***	<0.1	0.7	9.73	1.35	0.99	2.07	<0.1	<0.1	1.59	<0.24	<0.1	<0.1	89.3	119
MW074	0229_MW074_230825	25/08/2023	<0.1	0.11	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	6.76	6.52	51.6	3.09	***59.5***	<0.1	0.7	12.5	1.75	1.36	3.18	<0.1	<0.1	1.89	<0.25	<0.1	<0.1	111	149
MW106	0229_MW106_230825	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.08	0.03	0.32	<0.02	***0.4***	<0.02	<0.1	0.06	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.72	0.82
Stockpile Designated Area 2																																
MW141	0229_MW141_230825	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.09	0.84	0.03	***0.42***	<0.02	<0.1	0.19	0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.26	1.76
Suspected AFFF Disposal Area																																
MW101	0229_MW101_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.06	0.35	<0.02	***0.69***	<0.02	<0.1	0.08	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.04	1.34
Top, Middle and Lower Dams																																
MW138	0229_MW138_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.89	1.03	6.03	0.46	***8.33***	<0.02	<0.1	1.44	0.31	0.2	0.43	<0.02	<0.02	0.04	<0.06	<0.02	<0.02	14.4	19.2
Base Boundary																																
MW002	0229_MW002_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.06	0.61	<0.02	***0.78***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.39	1.57
MW003	0229_MW003_230824	24/08/2023	<0.05	0.18	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.18
MW118	0229_MW118_230825	25/08/2023	<0.05	0.2	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.02	0.04	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11	0.37
MW119	0229_MW119_230825	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.31	<0.02	0.06	<0.02	0.05	<0.02	0.1	0.21	0.18	0.14	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11	1.2
MW124	0229_MW124_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW125I	0229_MW125I_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.15	<0.02	0.02	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.17	0.24
MW125S	0229_MW125S_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.37	0.22	2.28	<0.02	0.03	<0.02	<0.1	0.75	0.1	0.04	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.31	3.83
Off-Base																																
MW205S	0229_MW205S_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
MW212	0229_MW212_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW217	0229_MW217_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.04
MW220S	0229_MW220S_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.09	**0.69**	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.72**	0.98
MW226	0229_MW226_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.18	0.08	**0.65**	<0.02	0.07	<0.02	<0.1	0.11	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.72**	1.09
MW232	0229_MW232_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	<0.02	**0.1**	<0.02	***0.17***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.27**	0.34
MW233	0229_MW233_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.04	<0.02	**0.08**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.12**	0.12
MW235S	0229_MW235S_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.04
MW236S	0229_MW236S_230824	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.05	<0.02	**0.09**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.14**	0.18

LOR is limit of reporting
µg/L is micrograms per litre
# denotes disturbance to the well may have impacted sample integrity
< denotes concentration is less than
PFAS NEMP 2020 Drinking Water guideline applied to off-Base monitoring wells only.
Heads of Environmental Protection Agencies (HEPA). (2020). *PFAS National Environmental Management Plan (NEMP).*
Denotes first time detection above LOR
Denotes new exceedance of guideline values

Table T3: Surface Water Quality Parameter Results

Location Code	Sample Date	DO mg/L	EC µS/cm	pH	Redox (mV)	Corrected Redox (mV)	Temp (°C)	Tubidity	Water Colour	Odour	Sheen	Comments
Eastern PFAS Contamination Area												
SW119	22/08/2023	10.23	1938	8.67	43.8	237.8	24.2	Clear	Light Olive Brown	No odour	No sheen	Conccrete drain, minimal flow, algae observed
SW121	22/08/2023	Location Dry										
Former Fire Station												
SW109	22/08/2023	2.54	903	7.38	140.3	334.3	22.8	Clear	Light Olive Brown	No odour	No sheen	Earthen drain, no flow
SW110	22/08/2023	3.52	2180	7.36	53.2	247.2	23.6	Clear	Light Olive Brown	No odour	Biosheen	Earthen drain, water depth approx 5cm, channel full of reeds
Lavarack Golf Course & Sporting Field												
SW129	25/08/2023	Location Dry										
SW130	25/08/2023	Location Dry										
Top, Middle and Lower Dams												
SW139	22/08/2023	5.32	539	7.21	68.7	262.7	23.8	Low	Light Olive Brown	No odour	No sheen	Side of lake, no flow, high amount of weeds on water surface
SW140	22/08/2023	7.77	1090	7.92	152.8	346.8	26.0	Clear	Clear	No odour	No sheen	On dam wall, low flow, lots of fish
SW144	22/08/2023	3.77	360	7.35	138.7	332.7	24.6	Low	Light Olive Brown	No odour	No sheen	Side of lake, no flow, high amount of weeds on water surface
Base Boundary												
SW126	24/08/2023	Location Dry										
SW128	25/08/2023	4.39	506	7.78	73.1	267.1	22.2	Medium	Light Olive Brown	No odour	No sheen	Clay lined culvert, no flow
SW132	25/08/2023	3.84	1367	7.49	182.3	376.3	20.2	Low	Yellowish Brown	No odour	No sheen	Under bridge, low flow, high amount of weeds on water surface
SW133	25/08/2023	Location Dry										
SW134	22/08/2023	5.19	252.3	7.29	133.4	327.4	28.6	Clear	Light Olive Brown	No odour	No sheen	Drain, 1m wide, <5cm deep water, low flow
SW135	22/08/2023	4.87	700	7.40	129.5	323.5	24.6	Clear	Light Olive Brown	No odour	No sheen	Drainage channel, minimal flow, 2m wide
SW136	25/08/2023	Location Dry										
Remaining On-Base												
SW113	22/08/2023	7.42	589	8.10	46.9	240.9	26.3	Clear	Light Olive Brown	No odour	No sheen	Creek bed, no flow, leaf litter and algae observed
SW120	22/08/2023	Location Dry										
Off-Base												
SW203	21/08/2023	5.63	2744	6.85	185.2	379.2	23.0	Low	Yellowish Brown	No odour	No sheen	Creek, 2m wide, 0.5m deep, slow flow
SW205	21/08/2023	7.78	27076	7.42	197.5	391.5	26.0	Low	Dark Olive Brown	No odour	No sheen	Edge of River, 10 m wide, depth unknown, slow flow
SW211	21/08/2023	4.78	7012	7.00	245.4	439.4	19.1	Low	Olive Yellow	No odour	No sheen	Drainage creek, 1 m wide, 0.2m deep, no flow observed
SW212	21/08/2023	6.49	8512	7.84	222.8	416.8	20.0	Low	Light Olive Brown	No odour	No sheen	Concrete drain, 3m wide, 0.5m deep, low flow
SW217	21/08/2023	5.63	855	7.12	207.3	401.3	23.1	Low	Light Olive Brown	No odour	No sheen	Drainage channel, 1m wide, 0.5m deep, low flow
SW220	21/08/2023	6.19	2876	7.97	140.4	334.4	25.8	Low	Light Olive Brown	No odour	No sheen	Drainage channel, 5m wide, 1m deep, slow flow
SW227	22/08/2023	6.21	247.8	7.57	56.2	250.2	23.7	Clear	Clear	No odour	No sheen	Under bridge, moderate flow
SW232	21/08/2023	6.79	33531	7.73	150.3	344.3	26.3	Low	Light Olive Brown	No odour	Biosheen	Creek, 3 m wide, 1 m deep, moderate flow
SW233	21/08/2023	2.76	1372	7.15	175.0	369.0	21.2	Low	Yellowish Brown	No odour	No sheen	Creek, 2m wide, 0.6 m deep, low flow
SW242	21/08/2023	7.45	33331	7.93	198.1	392.1	25.6	Low	Dark Olive Grey	No odour	No sheen	Edge of lake, 200m wide, 50m wide, depth unknown, high flow
SW243	21/08/2023	8.72	759	7.97	126.6	320.6	26.0	Low	Light Olive Brown	No odour	No sheen	Edge of lake, 15m wide, moderate flow
SW244	22/08/2023	5.53	237.2	7.50	117.9	311.9	24.7	Clear	Clear	No odour	No sheen	Slow flow just above weir, high flow
SW245	22/08/2023	6.08	207.4	7.40	65.9	259.9	21.7	Clear	Clear	No odour	No sheen	Slow flow just above weir, high flow

AECOM

Table T4: Surface Water PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

		PFAS Full Suite																														
		4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoropentanoic acid (PFPeA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic Acid (PFOA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFOS + PFHxS	Sum of PFAS
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.05	0.05	0.05	0.05	0.05	0.02	0.05	0.02	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.01	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.01	0.01
NHMRC (2019) PFAS Recreational Water																							**10**							**2**	
PFAS NEMP 2020 Drinking Water* (HEPA, 2020)															*0.07*		*0.07*						*0.56*							*0.07*	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location	**Sample ID**	**Sampled Date**																														
Eastern PFAS Contamination Area																																
SW119	0229_SW119_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.55	<0.02	***0.46***	<0.02	<0.1	0.16	0.02	0.24	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.01	1.47
Former Fire Station																																
SW109	0229_SW109_230822	22/08/2023	<0.1	<0.13	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	6.25	5.69	30.8	1.06	***47.2***	<0.1	1.5	12	2.15	1.61	3.55	<0.1	<0.1	<0.1	<0.24	<0.1	<0.1	**78**	112
SW110	0229_SW110_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	3.36	2.78	15	0.54	***23.2***	<0.05	0.6	4.72	0.84	0.67	1.48	<0.05	<0.05	0.07	<0.12	<0.05	<0.05	**38.2**	53.3
Top, Middle and Lower Dams																																
SW139	0229_SW139_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.12	1.04	0.06	***1.35***	<0.02	<0.2	0.29	0.04	0.05	0.09	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	**2.39**	3.22
SW140	0229_SW140_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.23	0.17	1.59	0.09	***2.66***	<0.02	0.1	0.25	0.04	0.03	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**4.25**	5.25
SW144	0229_SW144_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.1	<0.02	0.09	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.19	0.22
Base Boundary																																
SW128	0229_SW128_230825	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.03	<0.02	<0.2	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.05
SW132	0229_SW132_230825	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.32	0.29	2.52	0.15	***2.96***	<0.02	0.1	0.48	0.06	0.05	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**5.48**	7.07
SW134	0229_SW134_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW135	0229_SW135_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.05	0.32	<0.02	***0.32***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.64	0.78
Remaining On-Base																																
SW113	0229_SW113_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	0.16	<0.02	0.07	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.23	0.36
Off-Base																																
SW203	0229_SW203_230821	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.07	0.4	<0.02	***0.4***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.8	1.06
SW205	0229_SW205_230821	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
SW211	0229_SW211_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.06
SW212	0229_SW212_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
SW217	0229_SW217_230821	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW220	0229_SW220_230821	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.29	0.23	1.77	0.03	***0.97***	<0.02	<0.1	0.36	0.05	0.03	0.06	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	**2.74**	3.81
SW227	0229_SW227_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW232	0229_SW232_230821	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.05	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09	0.11
SW233	0229_SW233_230821	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.09	0.53	<0.02	***0.54***	<0.02	<0.1	0.16	0.02	<0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.07	1.53
SW242	0229_SW242_230821	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.06	<0.02	***0.34***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.4	0.42
SW243	0229_SW243_230821	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW244	0229_SW244_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW245	0229_SW245_230822	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01

NS - No Sample - Surface water not present
LOR is limit of reporting
µg/L is micrograms per litre
< denotes concentration is less than
Heads of Environmental Protection Agencies (HEPA). (2020). *PFAS National Environmental Management Plan (NEMP)*.
National Health and Medical Research Council (NHMRC). (2019). *Guidance on PFAS in Recreational Water.* August 2019 (NHMRC 2019).
*PFAS NEMP 2020 Drinking Water is used for SW245 only. This is the only sample location upstream of Blacks Weir in the Ross River, the backup drinking water source for the city of Townsville.
Denotes first time detection above LOR
Denotes new exceedance of guideline values

Table T5: Sediment Observation Results

Location ID	Date	Sample Description	Odour	Comment
Eastern PFAS Contamination Area				
SD119	22/08/2023	silty SAND, loose, brown, fine to coarse grained, subangular, moist	Organic	Grass roots and algae
SD121	22/08/2023	CLAY, soft, black, low plasticity, moist	N	Root matter and leaves
Former Fire Station				
SD109	22/08/2023	sandy CLAY, soft, brown, low plasticity, fine grained sand, moist	N	Root matter
SD110	22/08/2023	sandy CLAY, soft, brown, low plasticity, fine grained sand, moist	N	Root matter
Lavarack Golf Course & Sporting Field				
SD129	25/08/2023	SAND, loose, brown, fine to coarse grained, subangular with trace fine to medium subangular gravels, moist	N	Grass and root matter
SD130	25/08/2023	sandy CLAY, soft, brown, low plasticity, fine to coarse grained sand, dry	N	Grass and root matter
Top, Middle and Lower Dams				
SD139	22/08/2023	clayey SAND, loose, brown, fine to medium grained, saturated	N	Root matter
SD140	22/08/2023	clayey SAND, loose, brown, fine to medium grained, saturated	N	Root matter
SD144	22/08/2023	silty SAND, loose, black, fine to coarse grained, subangular, moist	N	Root matter
Remaining On-Base				
SD113	22/08/2023	gravelly SAND, loose, brown, fine to coarse grained, subangular, fine to medium gravels, saturated	N	Creek bed
SD120	22/08/2023	SAND, loose, brown, fine to coarse grained, subangular, dry	N	Dry creek bed
Base Boundary				
SD126	25/08/2023	SAND, loose, brown, fine to coarse grained, subangular, dry	N	Concrete drain
SD128	25/08/2023	CLAY, soft, brown, low plasticity, moist	N	Grass and root matter
SD132	25/08/2023	sandy CLAY, soft, brown, medium plasticity, fine to medium grained sand, moist	N	High amount of weeds
SD133	25/08/2023	CLAY, soft, brown, low plasticity, dry	N	Grass and root matter
SD134	22/08/2023	sandy CLAY, soft, black, low plasticity, fine to medium grained sand, saturated	N	Root matter
SD135	22/08/2023	SAND, loose, brown, fine to coarse grained, subangular, saturated	N	Dry creek bed
SD136	25/08/2023	SAND, loose, brown, fine to coarse grained, subangular, dry	N	Concrete drain
Off-Base				
SD203	21/08/2023	sandy GRAVEL, loose, light brown, angular, medium grained sand, moist	N	Medium organic content
SD205	21/08/2023	sandy CLAY, firm, brown, moderate plasticity, subangular, fine grained sand, moist	N	Medium organic content
SD211	22/08/2023	sandy GRAVEL, loose, dark brown, fine grained sand, moist	N	Medium organic content
SD212	22/08/2023	sandy GRAVEL, loose, light brown, medium grained sand, moist	N	Medium organic content
SD217	21/08/2023	sandy CLAY, loose, brown, moderate plasticity, subangular, fine grained sand, moist	N	Medium organic content
SD220	21/08/2023	silty CLAY, loose, dark brown, low plasticity, fine silt, moist	N	Medium organic content
SD227	21/08/2023	SAND, loose, brown, fine to coarse grained, subangular with trace fine subangular gravels, saturated	N	Nil
SD232	21/08/2023	silty CLAY, loose, brown, moderate plasticity, subangular, fine grained sand, moist	N	Medium organic content
SD233	21/08/2023	sandy CLAY, loose, brown, moderate plasticity, subangular, fine grained sand, moist	N	Medium organic content
SD242	21/08/2023	gravelly CLAY, loose, dark brown, large gravels, moist	N	Medium organic content
SD243	21/08/2023	silty CLAY, loose, brown, moderate plasticity, fine grained sand, moist	N	Medium organic content
SD244	21/08/2023	gravelly SAND, loose, brown, fine to coarse grained, subangular, fine to medium subangular gravels, saturated	N	Nil
SD245	21/08/2023	silty SAND, loose, brown, fine to coarse grained, subangular, saturated	N	Leaves

AECOM

Table T6: Sediment PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

			PFAS Full Suite																																	
			4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoropentanoic acid (PFPeA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic Acid (PFOA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFOS + PFHxS	Sum of PFAS
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR			0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002
Location	**Sample ID**	**Sampled Date**																																		
Eastern PFAS Contamination Area																																				
SD119	0229_SD119_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0018	0.0028	0.0321	0.0011	0.035	<0.0002	<0.001	0.0034	0.0006	0.0005	0.002	<0.0002	<0.0002	0.0019	<0.0005	<0.0002	<0.0002	0.0671	0.0812
SD121	0229_SD121_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0016	<0.0002	0.0055	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0071	0.0073
Former Fire Station																																				
SD109	0229_SD109_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	0.0005	<0.0012	0.0039	<0.0012	<0.0005	<0.0012	0.012	0.0134	0.124	0.0108	0.458	0.0015	<0.002	0.028	0.006	0.0042	0.0109	<0.0005	<0.0005	0.0008	<0.0012	0.0007	<0.0005	0.582	0.675
SD110	0229_SD110_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	0.0027	<0.0012	<0.0005	<0.0012	0.002	0.0024	0.0334	0.0057	0.669	0.0009	<0.002	0.0047	0.0009	0.001	0.0034	<0.0005	<0.0005	0.0007	<0.0012	0.0006	0.0006	0.702	0.728
Lavarack Golf Course & Sporting Field																																				
SD129	0229_SD129_230825	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0005	0.0004	0.0063	0.0005	0.005	<0.0002	<0.001	0.0004	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0113	0.0135
SD130	0229_SD130_230825	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0002	<0.0002	0.0008	<0.0002	0.0062	<0.0002	<0.002	<0.0002	<0.0009	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0012	<0.0005	<0.0005	0.007	0.007
SD133	0229_SD133_230825	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0024	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0024	0.0024
SD134	0229_SD134_230822	22/08/2023	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0002	<0.0025	<0.001	<0.0005	<0.0002	<0.0025	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.0002	<0.0025	<0.001	<0.001	<0.0002	0.0003
Top Middle and Lower Dams																																				
SD139	0229_SD139_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0022	<0.0002	0.0134	<0.0002	<0.001	0.0006	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0156	0.0164
SD140	0229_SD140_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0003	<0.0003	0.0041	<0.0004	0.0316	<0.0002	<0.001	0.0005	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0357	0.0364
SD144	0229_SD144_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0114	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0126	0.0126
Base Boundary																																				
SD126	0229_SD126_230825	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
SD128	0229_SD128_230825	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0034	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0037	0.0039
SD132	0229_SD132_230825	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0036	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0044	0.0044
SD135	0229_SD135_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009
SD136	0229_SD136_230825	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Remaining On-Base																																				
SD113	0229_SD113_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
SD120	0229_SD120_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
Off-Base																																				
SD203	0229_SD203_230821	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0015	0.0015
SD205	0229_SD205_230821	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0026	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0026	0.0026
SD211	0229_SD211_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
SD212	0229_SD212_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
SD217	0229_SD217_230821	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0005	<0.0002	0.0011	<0.0002	0.0024	<0.0002	<0.001	0.0003	<0.0002	<0.0002	0.0007	0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0035	0.0052
SD220	0229_SD220_230821	21/08/2023	<0.001	<0.001	<0.001	<0.001	<0.0024	<0.001	<0.0024	<0.0002	<0.0024	<0.001	<0.0024	0.0004	0.0004	0.0059	0.0003	0.0192	<0.0002	<0.001	0.0011	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	0.0003	<0.0005	<0.001	<0.001	0.0251	0.0276
SD227	0229_SD227_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD232	0229_SD232_230821	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0007	<0.0002	0.0025	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0032	0.0034
SD233	0229_SD233_230821	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0003	0.0003	0.0028	0.0004	0.0206	0.0003	<0.001	0.0003	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0234	0.0253
SD242	0229_SD242_230821	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	<0.0002	0.0054	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.006	0.006
SD243	0229_SD243_230821	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD244	0229_SD244_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD245	0229_SD245_230822	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002

NS - No Sample - Sediment not present
LOR is limit of reporting
mg/kg is milligrams per kilogram
< denotes concentration is less than
Denotes first time detection above LOR

AECOM

Table T7: Historical Groundwater PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
Eastern PFAS Contamination Area																															
MW018	12/09/2017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	1.27	2.16	12.3	0.87	***30.4***	<0.02	0.5	4.75	0.8	1	1.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	42.7	55.06
	30/08/2018	<0.01	0.012	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.4	1.2	8.1	0.46	***13***	<0.01	0.33	2.3	0.45	0.3	0.46	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	21.1	28.012
	30/08/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.4	1.1	7.9	0.38	***15***	<0.01	1.4	5.8	1.2	0.33	0.59	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	22.9	35.1
	17/05/2019	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	5.03	4.84	25.3	0.91	***23.6***	<0.05	0.4	9.92	1.46	0.96	1.38	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	48.9	73.8
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.17	0.14	0.99	0.044	***2***	<0.01	<0.05	0.31	0.056	0.036	0.057	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	2.99	3.803
	4/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.11	0.096	0.58	0.028	***1***	<0.01	<0.05	0.18	0.034	0.023	0.037	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.58	2.088
	28/10/2020	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	2.97	2.79	15.3	1.11	***22.1***	<0.10	0.8	5.61	1.09	0.78	1.12	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	37.4	53.67
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.09	<0.04	<0.09	<0.04	<0.09	<0.04	<0.09	2.22	2.19	13.8	0.78	***22.8***	<0.04	0.4	4.23	0.72	0.44	0.87	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	36.6	48.45
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.44	0.46	2.66	0.16	***4.69***	<0.02	<0.1	0.9	0.15	0.11	0.19	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	7.35	9.76
	4/03/2022	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	3.68	3.98	26.5	1.78	***47.9***	<0.05	0.4	6.86	0.73	0.92	1.88	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	74.4	94.6
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.14	0.9	0.07	***2.24***	<0.02	<0.1	0.24	0.04	0.04	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	3.14	3.9
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	6.23	5.46	26	1.78	***38.4***	<0.05	1	9.89	1.82	1.02	1.86	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	64.4	93.5
	23/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.08	0.67	0.04	***1.47***	<0.02	<0.2	0.2	0.02	0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.14	2.66
MW114	18/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.93	0.78	5.1	0.2	***0.38***	<0.01	0.4	1.9	0.48	0.38	0.45	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	5.48	11
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.10	<0.04	<0.10	<0.04	<0.10	<0.04	<0.10	0.92	0.94	5.29	0.21	***0.48***	<0.04	0.3	2.2	0.4	0.33	0.39	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	5.77	11.46
	31/03/2021	<0.08	<0.08	<0.08	<0.08	<0.21	<0.08	<0.21	<0.08	<0.21	<0.08	<0.21	2.58	2.8	15.2	0.75	***2.15***	<0.08	0.7	5.68	1.01	0.92	1.32	<0.08	<0.08	<0.08	<0.21	<0.08	<0.08	17.35	33.11
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.5	0.56	2.57	0.1	***0.21***	<0.02	0.2	1.18	0.22	0.17	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.78	5.91
	4/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	1.38	1.34	6.9	0.42	***0.91***	<0.02	0.3	2.71	0.45	0.44	0.67	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	7.81	15.5
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	2.12	2.36	12.6	0.7	***2.09***	<0.02	0.3	4.57	0.78	0.73	1.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	14.7	27.3
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	4.24	4.09	21.9	1.56	***4.19***	<0.02	1	8.01	1.46	1.26	2.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	26.1	49.7
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	3.14	3.57	18	0.82	***3.97***	<0.02	1.2	7.72	1.61	1.49	2.39	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	22	43.9
MW115	12/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.062	0.073	1	0.024	***0.52***	<0.01	<0.05	0.1	<0.02	<0.01	0.038	<0.01	<0.01	0.039	<0.02	<0.02	<0.01	1.52	1.856
	13/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.062	0.095	1	0.029	***0.57***	<0.01	<0.05	0.073	<0.02	<0.01	0.024	<0.01	<0.01	0.049	<0.02	<0.02	<0.01	1.57	1.902
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.34	0.096	0.51	<0.01	***0.85***	<0.01	0.082	0.22	0.062	<0.01	0.015	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.36	2.175
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.28	0.12	0.77	0.017	***0.81***	<0.01	0.06	0.17	0.043	<0.01	0.019	<0.01	<0.01	0.021	<0.02	<0.02	<0.01	1.58	2.31
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.44	0.12	0.54	0.02	***0.55***	<0.02	<1.10	0.26	<0.10	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.09	1.95
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.28	0.12	0.32	<0.02	***0.46***	<0.02	<0.2	0.16	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.78	1.37
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.19	0.07	0.27	<0.02	***0.34***	<0.02	<0.1	0.13	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.61	1.02
	4/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	0.09	0.36	<0.02	***0.2***	<0.02	<0.1	0.14	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.56	0.94
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.04	0.16	<0.02	***0.1***	<0.02	<0.1	0.07	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.26	0.47
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	0.08	0.34	<0.02	***0.16***	<0.02	<0.1	0.12	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.5	0.85
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.07	0.42	<0.02	***0.14***	<0.02	<0.1	0.14	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.56	0.91
MW116	13/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.017	<0.01	0.017	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.017	0.034
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	<0.01	0.027	<0.01	<0.02	<0.01	<0.05	0.021	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.027	0.072
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.023	0.011	0.029	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.029	0.063
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.01	0.03	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.06
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	0.07	<0.02	0.01	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.08	0.2
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	0.07	<0.02	<0.01	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	0.17
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.05	0.12	<0.02	0.01	<0.02	<0.1	0.05	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.13	0.36
	4/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.04	0.11	<0.02	0.02	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.13	0.32
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.03	0.1	<0.02	<0.01	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.1	0.26
	10/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.04	0.11	<0.02	<0.01	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11	0.33
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	0.03	0.16	<0.02	0.02	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.18	0.41
MW139	12/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.13	0.14	1.6	0.048	***2.7***	<0.01	0.063	0.14	0.028	0.018	0.042	<0.01	<0.01	0.014	<0.02	<0.02	<0.01	4.3	4.923
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.12	0.13	1.5	0.038	***2.1***	<0.01	0.062	0.12	0.024	0.016	0.038	<0.01	<0.01	0.011	<0.02	<0.02	<0.01	3.6	4.159
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.097	0.12	1.5	0.047	***2.2***	<0.01	0.055	0.13	0.023	0.014	0.034	<0.01	<0.01	0.014	<0.02	<0.02	<0.01	3.7	4.234
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.092	0.12	1.2	0.045	***1.7***	<0.01	0.055	0.12	0.023	0.014	0.037	<0.01	<0.01	0.011	<0.02	<0.02	<0.01	2.9	3.417
	5/12/2019	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.11	0.14	1.3	0.06	***1.9***	<0.01	0.06	0.14	0.03	0.02	0.04	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	3.2	3.81
	28/10/2020	<0.05	0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.13	1.32	0.06	***2.04***	<0.02	<0.1	0.12	0.03	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	3.36	3.89
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.14	1.47	0.07	***2.85***	<0.02	<0.1	0.12	0.03	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	4.32	4.83
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.15	1.34	0.07	***2.13***	<0.02	<0.1	0.12	0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	3.47	3.98
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.12	1.23	0.06	***2.32***	<0.02	<0.1	0.08	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	3.55	3.95
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.1	0.96	0.04	***1.7***	<0.02	<0.1	0.07	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.66	2.98
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.11	1.04	0.05	***1.93***	<0.02	<0.1	0.08	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.97	3.36
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.11	1.1	0.05	***2.15***	<0.02	<0.1	0.08	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	3.25	3.62
Former B Squadron																															
MW135	10/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.28	0.19	1.7	0.055	***1.8***	<0.01	0.2	0.72	0.15	0.041	0.092	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	3.5	5.228
	10/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.31	0.23	1.8	0.068	***2***	<0.01	0.081	0.19	0.062	0.043	0.092	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	3.8	4.876
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.21	0.2	5.5	0.26	***3.9***	<0.01	0.086	0.38	0.049	0.078	0.19	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	9.4	10.853
	4/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.16	0.16	2	0.13	***2.6***	<0.01	0.068	0.21	0.028	0.028	0.12	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	4.6	5.504
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.13	1.73	0.13	***2.37***	<0.02	<0.10	0.11	<0.10	0.02	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	4.1	4.69
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.09	<0.04	<0.09	<0.04	<0.09	<0.04	<0.09	0.53	0.73	14	0.75	***9.54***	<0.04	<0.2	1.04	0.13	0.13	0.34	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	23.54	27.19
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.14	1.7	0.11	***2.41***	<0.02	<0.1	0.15	<0.02	0.02	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	4.11	4.74
	4/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.1	1.04	0.09	***1.78***	<0.02	<0.1	0.08	<0.02	<0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.82	3.25
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.07	0.63	0.04	***0.55***	<0.02	<0.1	0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.18	1.4
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.21	0.2	2.45	0.33	***11.8***	<0.02	<0.1	0.27	0.05	0.03	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	14.2	15.5
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.07	0.51	0.03	***0.42***	<0.02	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.93	1.11

AECOM

Table T7: Historical Groundwater PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

Location ID	Sample Date	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Former Fire Station																															
MW105	17/07/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.15	0.12	1.3	0.04	***0.83***	<0.01	0.052	0.48	0.087	0.022	0.053	<0.01	<0.01	0.021	<0.02	<0.02	0.017	2.13	3.172
	31/08/2018	0.016	0.46	0.039	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	7.6	6.7	55	1.5	***21***	<0.01	1.3	17	2.8	1.4	2.4	<0.01	<0.01	0.21	<0.02	<0.02	0.012	76	117.437
	12/07/2019	0.01	0.36	0.056	<0.01	<0.02	<0.01	<0.05	0.013	<0.02	<0.01	<0.05	6	4.9	49	1.2	***26***	<0.01	0.85	11	1.9	1.1	1.6	<0.01	<0.01	0.16	<0.02	<0.02	0.017	75	104.166
	3/12/2019	<0.01	0.3	0.039	<0.01	<0.02	<0.01	<0.05	0.011	<0.02	<0.01	<0.05	4.9	4.7	42	0.98	***26***	<0.01	0.91	12	1.7	0.87	1.6	<0.01	<0.01	0.13	<0.02	<0.02	0.015	68	96.155
	29/10/2020	<0.07	0.24	<0.07	<0.07	<0.17	<0.07	<0.17	<0.07	<0.17	<0.07	<0.17	4.52	5	37.6	1.71	***25.8***	<0.07	0.7	11.2	1.78	1.02	1.65	<0.07	<0.07	0.11	<0.17	<0.07	<0.07	63.4	91.33
	31/03/2021	<0.4	<0.4	<0.4	<0.4	<1	<0.4	<1	<0.4	<1	<0.4	<1	3.76	4.48	31.3	1.56	***29.6***	<0.4	<2	9.12	1.6	0.92	1.64	<0.4	<0.4	<0.4	<1	<0.4	<0.4	60.9	83.98
	18/08/2021	<0.05	0.24	<0.05	<0.05	<0.09	<0.04	<0.09	<0.04	<0.09	<0.04	<0.09	4.13	4.84	33.4	1.5	***27.3***	<0.04	0.7	9.94	1.62	0.96	1.62	<0.04	<0.04	0.14	<0.09	<0.04	<0.04	60.7	86.4
	3/03/2022	<0.05	0.12	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	2.72	3	20.9	1.04	***16.9***	<0.05	0.4	5.92	0.58	0.91	1.03	<0.05	<0.05	0.08	<0.12	<0.05	<0.05	37.8	53.6
	24/08/2022	<0.05	0.2	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	4.16	5.94	35.4	1.95	***25.3***	<0.02	0.4	8.5	1.47	1.05	1.65	<0.02	<0.02	0.11	<0.05	<0.02	<0.02	60.7	86.1
	9/03/2023	<0.05	0.18	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	5.7	5.66	39.7	2.14	***28***	<0.05	0.7	11.2	1.91	1.17	1.8	<0.05	<0.05	0.17	<0.12	<0.05	<0.05	67.7	98.3
	24/08/2023	<0.1	0.4	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	6.77	9.38	61.6	2.81	***37.6***	<0.1	0.8	15.6	2.79	1.68	3.1	<0.1	<0.1	0.3	<0.25	<0.1	<0.1	99.2	143
MW128	18/07/2018	<0.01	0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.43	0.41	5	0.42	***22***	<0.01	0.13	0.92	0.22	0.11	0.36	<0.01	<0.01	1.2	<0.02	<0.02	<0.01	27	31.21
	31/08/2018	0.038	<0.01	0.089	<0.01	<0.02	<0.01	<0.05	0.5	<0.02	<0.01	<0.05	18	20	240	13	***380***	<0.01	8.2	51	14	6.3	18	0.22	<0.01	35	<0.02	<0.02	0.16	620	804.507
	31/08/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	25	22	290	13	***490***	<0.01	31	350	47	9.3	19	0.2	<0.01	30	<0.02	<0.02	0.16	780	1326.66
	12/07/2019	<0.01	0.44	0.1	<0.01	<0.02	<0.01	<0.05	0.83	<0.02	<0.01	<0.05	24	22	240	16	***510***	<0.01	5.3	52	9.5	5.6	17	0.34	<0.01	26	<0.02	<0.02	0.69	750	929.8
	3/12/2019	0.013	0.62	0.17	<0.01	<0.02	<0.01	<0.05	0.57	<0.02	<0.01	<0.05	38	38	370	25	***570***	<0.01	8.3	86	16	10	27	0.2	<0.01	17	<0.02	<0.02	0.32	940	1207.193
	3/12/2019	0.017	0.61	0.19	<0.01	<0.02	<0.01	<0.05	0.58	<0.02	<0.01	<0.05	35	34	340	23	***590***	<0.01	7.5	80	14	10	23	0.18	<0.01	15	<0.02	<0.02	0.34	930	1173.417
	3/12/2019	0.01	<0.05	0.23	<0.01	<0.01	<0.01	<0.01	0.9	<0.01	<0.01	<0.01	38	41	360	32	***490***	<0.01	7.7	87	17	11	31	0.2	<0.01	10	<0.01	<0.01	0.36	850	1126.4
	29/10/2020	<0.70	<0.70	<0.70	<0.70	<1.75	<0.70	<1.75	<0.70	<1.75	<0.70	<1.75	24.3	28	248	21.5	***483***	<0.70	3.8	58.8	10.4	6.58	17.8	<0.70	<0.70	17.2	<1.75	<0.70	<0.70	731	919.38
	31/03/2021	<2.26	<2.26	<2.26	<2.26	<5.64	<2.26	<5.64	<2.26	<5.64	<2.26	<5.64	34.5	43.3	419	33.4	***876***	<2.26	12.2	98.4	21.4	10.2	26.9	<2.26	<2.26	49.4	<5.64	<2.26	<2.26	1300	1624.7
	18/08/2021	<0.81	<0.81	<0.81	<0.81	<2.02	<0.81	<2.02	<0.81	<2.02	<0.81	<2.02	28.9	32.8	306	21.2	***461***	<0.81	6	80.1	15.6	8.22	19.4	<0.81	<0.81	20.8	<2.02	<0.81	<0.81	767	1000
	3/03/2022	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.62	<0.25	<0.62	<0.25	<0.62	6.68	7.78	82.5	4.78	***67.2***	<0.25	2	16.3	1.75	3.4	4.52	<0.25	<0.25	1.75	<0.62	<0.25	<0.25	150	199
	24/08/2022	<0.05	0.08	<0.05	<0.05	<0.09	<0.04	<0.09	0.14	<0.09	<0.04	<0.09	17.5	20.5	163	9.26	***152***	0.04	3	38.4	7.83	4.37	8.35	0.05	<0.04	3.09	<0.09	<0.04	<0.04	315	428
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.24	0.25	2.75	0.15	***6.05***	0.04	0.6	0.73	0.4	0.06	0.15	<0.02	<0.02	<0.04	<0.05	<0.02	0.02	8.8	11.4
	24/08/2023	<0.96	<0.96	1.53	<0.96	<2.39	<0.96	<2.39	5.16	<2.39	<0.96	<2.39	34.5	40.6	419	35.9	***786***	<0.96	5.3	99	14.8	10.2	32.7	<0.96	<0.96	2.48	<2.39	<0.96	<0.96	1200	1490
Former Fire Training Area																															
MW131	21/09/2018	<0.01	0.045	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.45	0.38	2.1	0.15	***5.3***	<0.01	0.12	0.93	0.18	0.14	0.26	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	7.4	10.055
	21/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.57	0.44	2.6	0.13	***5.3***	<0.01	2.7	8.3	2.2	0.18	0.27	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	7.9	22.69
	9/07/2019	<0.01	0.15	0.016	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.3	1	7.2	0.41	***16***	<0.01	0.4	2.4	0.58	0.44	0.79	<0.01	<0.01	0.013	<0.02	<0.02	<0.01	23.2	30.699
	9/07/2019	<0.01	0.12	0.017	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.1	0.87	6.1	0.36	***15***	<0.01	0.33	2.2	0.49	0.37	0.69	<0.01	<0.01	0.013	<0.02	<0.02	<0.01	21.1	27.66
	9/07/2019	<0.01	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.1	0.95	6.4	0.44	***14***	<0.01	0.33	2.5	0.46	0.47	0.83	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	20.4	27.59
	3/12/2019	<0.01	0.1	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.7	0.67	4	0.28	***11***	<0.01	0.22	1.5	0.33	0.25	0.46	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	15	19.51
	28/10/2020	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.53	0.44	2.95	0.21	***5.88***	<0.02	<0.50	1.08	0.2	0.17	0.28	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	8.83	11.81
	31/03/2021	<0.05	0.08	<0.05	<0.05	<0.1	<0.04	<0.1	<0.04	<0.1	<0.04	<0.1	1	1.02	4.97	0.23	***8.08***	<0.04	0.2	2.02	0.41	0.34	0.47	<0.04	<0.04	<0.04	<0.1	<0.04	<0.04	13.05	18.82
	19/08/2021	<0.05	0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.54	0.56	2.8	0.14	***5.32***	<0.02	<0.1	1.09	0.22	0.18	0.27	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	8.12	11.2
	3/03/2022	<0.05	0.08	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.74	0.64	3.55	0.18	***5.75***	<0.02	0.1	1.37	0.23	0.26	0.39	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	9.3	13.3
	7/10/2022	<0.05	0.44	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	8.3	7.68	36.8	2.93	***45.3***	<0.05	1.6	12.5	3.08	2.22	3.6	<0.05	<0.05	0.1	<0.12	<0.05	<0.05	82.1	124
	9/03/2023	<0.09	0.56	<0.09	<0.09	<0.23	<0.09	<0.23	<0.09	<0.23	<0.09	<0.23	12.2	10.3	51.2	3.6	***75.5***	<0.09	2.8	19.9	4.82	3.23	5.98	<0.09	<0.09	<0.2	<0.23	<0.09	<0.09	127	190
	25/08/2023	<0.1	0.5	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	5.1	4.48	27.4	1.38	***36.2***	<0.1	1.5	13.1	2.1	1.87	3.35	<0.1	<0.1	<0.1	<0.24	<0.1	<0.1	63.6	97
Former Helicopter Squadron																															
MW102	21/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.55	0.39	2.3	0.13	***3.3***	<0.01	0.59	1.6	0.38	0.093	0.17	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	5.6	9.503
	21/09/2018	<0.01	0.014	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.61	0.45	2.6	0.11	***1.9***	<0.01	0.13	0.52	0.14	0.11	0.19	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	4.5	6.774
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.43	0.3	1.6	0.072	***0.36***	<0.01	0.1	0.32	0.09	0.064	0.12	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.96	3.456
	3/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.52	0.41	2.8	0.11	***0.37***	<0.01	0.13	0.47	0.12	0.085	0.14	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	3.17	5.155
	29/10/2020	<0.05	0.12	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.08	0.54	0.03	***0.88***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.42	1.86
	31/03/2021	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.12	0.73	0.03	***0.98***	<0.02	0.1	0.11	0.05	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.71	2.38
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.6	0.51	2.96	0.19	***1.39***	<0.02	0.1	0.52	0.14	0.11	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	4.35	6.72
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.47	0.38	2.27	0.17	***1.47***	<0.02	<0.1	0.37	0.08	0.09	0.18	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	3.74	5.48
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.46	0.33	2.11	0.15	***1.04***	<0.02	<0.1	0.34	0.11	0.08	0.16	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	3.15	4.78
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.07	0.42	0.04	***0.42***	<0.02	<0.1	0.06	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.84	1.2
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.42	0.34	1.85	0.16	***1.92***	<0.02	<0.1	0.32	0.11	0.08	0.19	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	3.77	5.39
Lavarack Golf Course and Sporting Fields																															
MW065	14/09/2017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.83	0.89	40.2	0.69	***17.5***	<0.02	<0.1	2.89	0.44	0.22	0.37	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	57.7	64.03
	17/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.52	0.46	9.2	0.25	***8.2***	<0.01	0.47	3.8	0.46	0.12	0.22	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	17.4	23.7
	17/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.55	0.5	9	0.32	***8.7***	<0.01	0.26	2	0.3	0.12	0.25	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	17.7	22
	4/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.51	0.53	8.2	0.25	***7.5***	<0.01	0.2	1.5	0.23	0.11	0.19	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	15.7	19.22
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.09	<0.03	<0.09	<0.03	<0.09	<0.03	<0.09	0.36	0.45	7.17	0.27	***8.23***	<0.03	<0.2	1.47	0.2	0.09	0.18	<0.03	<0.03	<0.03	<0.09	<0.03	<0.03	15.4	18.42
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.4	0.52	7.19	0.39	***10.8***	<0.02	0.2	1.58	0.26	0.11	0.23	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	17.99	21.68
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	0.42	0.52	7.37	0.35	***8.78***	<0.05	<0.2	1.6	0.24	0.13	0.24	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	16.2	19.6
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.51	0.53	8.05	0.34	***9***	<0.02	0.2	1.93	0.14	0.32	0.29	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	17	21.3
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.39	0.53	7.22	0.42	***9.83***	<0.02	0.1	1.59	0.25	0.13	0.24	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	17	20.7
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.52	0.59	8.87	0.51	***12.9***	<0.02	0.2	2.13	0.35	0.14	0.3	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	21.8	26.5
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.52	0.73	9.73	0.46	***9.93***	<0.02	<0.1	2.29	0.34	0.17	0.33	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	19.7	24.5
MW120	13/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.022	0.015	0.15	<0.01	0.021	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.171	0.208
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.086	0.014	0.13	<0.01	0.034	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.164	0.264
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	<0.02	0.13	<0.02	***0.14***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.27	0.37
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.19	0.03	0.16	<0.02	0.12	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.28	0.52
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	<0.02	0.09	<0.02	0.12	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.21	0.31
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	<0.02	0.07	<0.02	0.12	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.19	0.26
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	<0.02	0.06	<0.02	0.1	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.16	0.26
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.03	<0.02	0.08	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11	0.14
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.04	<0.02	0.12	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.16	0.19

AECOM

Table T7: Historical Groundwater PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	*PFOS*	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
MW121	13/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.033	0.028	0.25	<0.01	0.035	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.285	0.346
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.063	0.042	0.3	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.3	0.405
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.04	0.33	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.39	0.48
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.03	0.27	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.33	0.4
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.04	0.28	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.34	0.42
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.04	0.26	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.32	0.4
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.04	0.3	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.37	0.45
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.06	0.42	<0.02	0.08	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.5	0.65
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.04	0.3	<0.02	0.11	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.41	0.49
MW122	26/09/2018	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.22	0.19	1.7	0.13	***3.9***	<0.01	0.25	0.17	0.035	0.045	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	5.6	6.79
	26/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.2	0.19	1.5	0.08	***3.8***	<0.01	0.15	0.2	0.044	0.034	0.11	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	5.3	6.308
	26/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.2	0.18	1.6	0.08	***3.6***	<0.01	0.14	0.2	0.044	0.034	0.11	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	5.2	6.188
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.063	0.042	0.3	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	4.3	5.102
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.19	0.17	1.5	0.1	***3.1***	<0.01	0.13	0.21	0.044	0.03	0.095	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	4.6	5.569
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.04	0.33	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.65	3.07
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.03	0.27	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.16	0.21
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.06	0.39	0.03	***0.85***	<0.02	<0.1	0.05	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.24	1.51
	3/03/2022	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	0.11	<0.1	0.79	<0.1	***2.2***	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.1	2.99	3.1
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.17	1.25	0.1	***2.88***	<0.02	<0.1	0.13	0.03	0.02	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	4.13	4.83
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.12	0.94	0.07	***2.37***	<0.02	<0.1	0.11	0.02	<0.02	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	3.31	3.86
	24/08/2023	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.18	0.16	1.14	0.1	***3.56***	<0.02	0.1	0.15	0.04	0.03	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	4.7	5.62
MW123I	18/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.16	0.089	0.2	<0.01	0.096	<0.01	<0.05	0.041	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.296	0.586
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.55	0.43	1.2	<0.01	<0.02	<0.01	<0.05	0.21	0.041	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.2	2.431
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.4	0.31	1	<0.01	<0.02	<0.01	<0.05	0.17	0.032	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1	1.912
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.3	0.22	0.7	<0.02	<0.01	<0.02	<0.1	0.13	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.7	1.38
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.12	0.37	<0.02	<0.01	<0.02	<0.1	0.07	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.37	0.73
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.2	0.18	0.51	<0.02	<0.01	<0.02	<0.1	0.09	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.51	0.98
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.52	0.38	0.99	<0.02	<0.01	<0.02	<0.1	0.26	<0.02	0.05	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.99	2.2
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.22	0.2	0.75	<0.02	<0.01	<0.02	<0.1	0.11	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.75	1.28
	8/03/2023	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	4.21	4.04	14.4	0.06	0.04	<0.02	0.3	2.38	0.38	0.17	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	14.4	26.1
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.21	0.14	0.41	<0.02	<0.01	<0.02	<0.1	0.07	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.41	0.83
MW123S	18/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.7	0.6	9.9	1	***1.9***	<0.01	0.23	1	0.21	0.16	0.59	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	11.8	16.29
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.94	0.82	27	0.88	***3***	<0.01	0.35	2	0.33	0.32	0.52	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	30	36.16
	4/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.88	0.74	12	0.84	***1.4***	<0.01	0.28	1	0.21	0.21	0.49	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	13.4	18.05
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.09	<0.03	<0.09	<0.03	<0.09	<0.03	<0.09	0.86	0.76	9.96	0.99	***2.64***	<0.03	0.2	1.13	0.2	0.16	0.51	<0.03	<0.03	<0.03	<0.09	<0.03	<0.03	12.6	17.4
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	1.03	1.02	17.5	2.04	***2.68***	<0.02	0.3	1.61	0.41	0.31	0.88	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	20.18	27.78
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.75	0.78	7.98	1.1	***3.24***	<0.02	0.2	1.05	0.2	0.16	0.52	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	11.2	16
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.69	0.63	9.43	1.2	***6.97***	<0.02	0.2	0.9	0.15	0.17	0.63	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	16.4	21
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.74	0.66	10.2	1.02	***4.21***	<0.02	0.1	0.94	0.2	0.17	0.52	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	14.4	18.8
	8/03/2023	<0.09	<0.09	<0.09	<0.09	<0.23	<0.09	<0.23	<0.09	<0.23	<0.09	<0.23	0.83	0.6	6.66	0.83	***6.25***	<0.09	<0.5	0.8	0.14	<0.09	0.37	<0.09	<0.09	<0.09	<0.23	<0.09	<0.09	12.9	16.5
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.78	0.74	6.93	0.81	***5.08***	<0.02	<0.1	0.76	0.14	0.12	0.44	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	12	15.8
Monocell																															
MW072	22/06/2016	<0.00001	0.00014	<0.00001	-	-	<0.00005	-	<0.00005	-	<0.00005	-	0.018	-	0.091	-	0.00055	<0.00001	0.0021	0.035	0.0058	0.0041	0.0066	<0.00001	<0.00001	0.0032	<0.00001	<0.00001	<0.00001	0.09155	0.16649
	22/09/2017	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	33.5	38	326	8.92	***25.8***	<0.1	2.6	60	8.67	7.37	10	<0.1	<0.1	2.89	<0.25	<0.1	<0.1	351.8	523.75
	18/10/2018	<0.01	0.1	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.18	6.5	74	2.5	***20***	<0.01	1.2	11	2.1	1.5	3.1	<0.01	<0.01	2.6	<0.02	<0.02	<0.01	94	124.78
	3/12/2019	<0.01	0.034	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	2.1	2	24	1.3	***42***	<0.01	0.55	4.8	0.71	0.5	1.2	<0.01	<0.01	2.3	<0.02	<0.02	<0.01	66	81.494
	17/04/2020	<0.05	0.31	<0.05	<0.05	<0.13	<0.05	<0.13	<0.05	<0.13	<0.05	<0.13	8.7	13.7	80.3	9.3	***100***	<0.05	1.5	19.6	3.1	2.19	5.56	<0.05	<0.05	5.23	<0.13	<0.05	<0.05	119.7	151.98
	28/10/2020	<0.47	<0.47	<0.47	<0.47	<1.18	<0.47	<1.18	<0.47	<1.18	<0.47	<1.18	4.55	4.55	39	4.5	***80.7***	<0.47	<2.4	8.82	1.61	1.14	2.94	<0.47	<0.47	4.17	<1.18	<0.47	<0.47	180.3	249.49
	3/02/2021	<0.01	0.19	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9.2	8.6	85	8.2	***230***	<0.01	0.95	16	3.1	2	5.2	<0.01	<0.01	7.3	<0.01	<0.01	<0.01	315	379.24
	2/03/2021	<0.38	<0.38	<0.38	<0.38	<0.96	<0.38	<0.96	<0.38	<0.96	<0.38	<0.96	6.52	6.68	52.6	5.8	***169***	<0.38	<1.9	12.2	2.34	1.57	4.14	<0.38	<0.38	5.18	<0.96	<0.38	<0.38	222	266
	2/03/2021	<0.38	<0.38	<0.38	<0.38	<0.96	<0.38	<0.96	<0.38	<0.96	<0.38	<0.96	7.56	6.27	50.6	6.19	***170***	<0.38	<1.9	12	2.29	1.64	3.94	<0.38	<0.38	5.2	<0.96	<0.38	<0.38	221	266
	31/03/2021	<0.42	<0.42	<0.42	<0.42	<1.05	<0.42	<1.05	<0.42	<1.05	<0.42	<1.05	7.35	8.1	61.4	6	***150***	<0.42	<2.1	12.9	2.27	1.68	4.37	<0.42	<0.42	4.37	<1.05	<0.42	<0.42	211.4	258.44
	20/08/2021	<0.24	<0.24	<0.24	<0.24	<0.6	<0.24	<0.6	<0.24	<0.6	<0.24	<0.6	5.69	6.91	44.9	3.47	***82.8***	<0.24	1.4	10.1	1.91	1.39	2.63	<0.24	<0.24	2.82	<0.6	<0.24	<0.24	128	164
	3/03/2022	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	5.39	5.27	37.2	3.44	***96***	<0.1	0.8	8.68	1.12	1.57	2.78	<0.1	<0.1	2.6	<0.25	<0.1	<0.1	133	165
	25/08/2022	<0.05	0.07	<0.05	<0.05	<0.09	<0.04	<0.09	<0.04	<0.09	<0.04	<0.09	5.34	5.92	37.2	3.22	***60.3***	<0.04	0.3	7.8	1.48	1	2.03	<0.04	<0.04	1.8	<0.09	<0.04	<0.04	97.5	126
	9/03/2023	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	7.92	7.03	39.8	3.24	***76.3***	<0.1	0.7	10	1.86	1.07	2.3	<0.1	<0.1	2.27	<0.24	<0.1	<0.1	116	152
	25/08/2023	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	5.66	5.44	39.3	2.26	***50***	<0.1	0.7	9.73	1.35	0.99	2.07	<0.1	<0.1	1.59	<0.24	<0.1	<0.1	89.3	119
MW074	22/06/2016	<0.00001	0.00015	<0.00001	-	-	<0.00005	-	<0.00005	-	<0.00005	-	0.0049	-	0.019	-	0.00012	<0.00001	0.00082	0.011	0.0021	0.0015	0.0025	<0.00001	<0.00001	0.0014	<0.00001	<0.00001	<0.00001	0.01912	0.04349
	14/09/2017	<0.05	0.18	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	9.72	8.32	69.5	4.16	***51.2***	<0.02	<0.1	15	2.86	2.02	3.62	<0.02	<0.02	1.53	<0.05	<0.02	<0.02	120.7	168.11
	13/10/2018	<0.01	0.16	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	4.1	4.1	40	1.6	***32***	<0.01	1.1	10	2.1	1.3	2.7	<0.01	<0.01	1.7	<0.02	<0.02	<0.01	72	100.86
	12/07/2019	<0.01	0.19	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	6.5	5.8	53	2.3	***53***	<0.01	0.99	9.9	1.9	1.3	2.7	<0.01	<0.01	1.5	<0.02	<0.02	<0.01	106	139.08
	3/12/2019	<0.01	0.15	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	5.3	4.8	45	4.1	***45***	<0.01	0.98	10	1.7	1.3	2.5	<0.01	<0.01	1.5	<0.02	<0.02	<0.01	90	122.33
	19/04/2020	<0.05	0.17	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	4.89	7.56	49.2	3.37	***57.6***	<0.05	1	11.2	1.91	1.32	2.78	<0.05	<0.05	1.78	<0.12	<0.05	<0.05	106.8	142.78
	19/04/2020	<0.05	0.17	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	4.94	7.35	47.8	3.2	***44.7***	<0.05	1	11.1	1.91	1.31	2.64	<0.05	<0.05	1.54	<0.12	<0.05	<0.05	92.5	127.66
	19/04/2020	<0.01	0.22	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.7	8	61	4.3	***66***	<0.01	1.2	12	2.3	1.5	3.1	<0.01	<0.01	2	<0.01	<0.01	<0.01	127	167.32
	28/10/2020	<0.48	<0.48	<0.48	<0.48	<1.20	<0.48	<1.20	<0.48	<1.20	<0.48	<1.20	5.93	5.84	41.1	2.87	***47.9***	<0.48	<2.4	10.2	1.96	1.48	2.68	<0.48	<0.48	1.44	<1.20	<0.48	<0.48	89	121.4
	2/03/2021	<0.07	0.11	<0.07	<0.07	<0.19	<0.07	<0.19	<0.07	<0.19	<0.07	<0.19	4.35	4.4	31.6	2.15	***33***	<0.07	0.6	7.4	1.53	1.06	1.98	<0.07	<0.07	1.1	<0.19	<0.07	<0.07	64.6	89.3
	31/03/2021	<0.4	<0.4	<0.4	<0.4	<1.01	<0.4	<1.01	<0.4	<1.01	<0.4	<1.01	3.89	4.62	33.4	2.03	***41.8***	<0.4	<2	7.38	1.58	0.93	2.07	<0.4	<0.4	1.05	<1.01	<0.4	<0.4	75.2	98.75
	19/08/2021	<0.19	0.21	<0.19	<0.19	<0.48	<0.19	<0.48	<0.19	<0.48	<0.19	<0.48	6.31	8.1	52.9	3.14	***54.2***	<0.19	1.4	12.8	2.46	1.71	3.37	<0.19	<0.19	1.69	<0.48	<0.19	<0.19	107	148
	3/03/2022	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	4.85	4.85	37.6	2.42	***45.6***	<0.1	0.8	8.25	1.15	1.59	2.78	<0.1	<0.1	1.34	<0.25	<0.1	<0.1	83.2	111
	25/08/2022	<0.05	0.14	<0.05	<0.05	<0.09	<0.04	<0.09	<0.04	<0.09	<0.04	<0.09	5.95	6.48	41.5	3.59	***55***	<0.04	0.4	9.42	1.82	1.18	2.34	<0.04	<0.04	1.54	<0.09	<0.04	<0.04	96.5	129
	9/03/2023	<0.05	0.08	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	6	6.14	41.4	3.33	***51***	<0.05	0.8	9.32	1.73	1.26	2.85	<0.05	<0.05	1.81	<0.12	<0.05	<0.05	92.4	126
	25/08/2023	<0.1	0.11	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	6.76	6.52	51.6	3.09	***59.5***	<0.1	0.7	12.5	1.75	1.36	3.18	<0.1	<0.1	1.89	<0.25	<0.1	<0.1	111	149

AECOM

Table T7: Historical Groundwater PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

Location ID	Sample Date	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
MW106	31/08/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.041	<0.01	0.12	<0.01	0.087	<0.01	<0.05	0.018	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.207	0.266
	31/08/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.042	<0.01	0.14	<0.01	0.093	<0.01	0.065	0.026	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.233	0.366
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.04	<0.01	0.098	<0.01	0.043	<0.01	<0.05	0.014	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.141	0.195
	3/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.041	0.017	0.2	<0.01	0.08	<0.01	<0.05	0.031	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.28	0.369
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	0.12	<0.02	0.09	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.21	0.28
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	<0.02	0.07	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12	0.2
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	0.25	<0.02	0.1	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.35	0.48
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.02	0.12	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.17	0.23
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	<0.02	0.16	<0.02	0.09	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.25	0.37
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.04	0.35	<0.02	***0.18***	<0.02	<0.1	0.07	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.53	0.79
	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.08	0.03	0.32	<0.02	***0.4***	<0.02	<0.1	0.06	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.72	0.82
Stockpile Designated Area 2																															
MW141	15/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.37	0.3	2.7	0.059	***0.76***	<0.01	0.19	0.86	0.15	0.046	0.069	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	3.46	5.504
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.42	0.34	3.1	0.076	***0.87***	<0.01	0.13	0.81	0.14	0.047	0.097	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	3.97	6.03
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.34	0.28	2.3	0.066	***0.72***	<0.01	0.11	0.67	0.11	0.041	0.081	<0.01	<0.01	0.019	<0.02	<0.02	<0.01	3.02	4.737
	3/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.23	0.2	1.6	0.054	***0.58***	<0.01	0.11	0.44	0.078	0.025	0.054	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	2.18	3.371
	3/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.23	0.19	1.5	0.055	***0.59***	<0.01	0.11	0.42	0.077	0.027	0.054	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	2.09	3.253
	3/12/2019	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.27	0.23	1.6	0.09	***0.83***	<0.01	0.11	0.52	0.09	0.04	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	2.43	3.88
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.27	0.24	1.68	0.07	***0.64***	<0.02	<0.1	0.49	0.09	0.03	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.32	3.58
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.22	0.2	1.61	0.07	***0.77***	<0.02	<0.1	0.48	0.1	0.04	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.38	3.56
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.1	0.78	0.03	***0.37***	<0.02	<0.1	0.23	0.05	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.15	1.73
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.14	1.06	0.05	***0.51***	<0.02	<0.1	0.28	0.02	0.05	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.57	2.33
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.15	1.12	0.04	***0.52***	<0.02	<0.1	0.28	0.05	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.64	2.37
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.19	0.13	0.96	0.04	***0.44***	<0.02	<0.1	0.23	0.04	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.4	2.07
	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.09	0.84	0.03	***0.42***	<0.02	<0.1	0.19	0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.26	1.76
Suspected AFFF Disposal Area																															
MW101	20/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.057	0.018	0.2	0.011	***0.64***	<0.01	<0.05	0.042	<0.02	<0.01	0.016	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.84	0.984
	20/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.058	0.017	0.23	0.012	***0.57***	<0.01	0.081	0.26	0.055	<0.01	0.012	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.8	1.295
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.13	0.035	0.28	<0.01	***0.53***	<0.01	<0.05	0.033	<0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.81	1.018
	3/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.086	0.035	0.36	0.011	***0.62***	<0.01	<0.05	0.051	<0.02	0.01	0.018	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.98	1.191
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.2	0.1	0.8	0.04	***1.27***	<0.02	<0.1	0.13	0.03	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.07	2.63
	31/03/2021	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.26	0.08	0.34	<0.02	***0.34***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.68	1.17
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.26	0.1	0.6	0.03	***0.67***	<0.02	<0.1	0.09	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.27	1.78
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.41	0.12	0.42	<0.02	***0.37***	<0.02	<0.1	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.79	1.41
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.43	0.14	0.53	<0.02	***0.37***	<0.02	<0.1	0.07	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.9	1.55
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.03	0.15	<0.02	***0.2***	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.35	0.56
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.06	0.35	<0.02	***0.69***	<0.02	<0.1	0.08	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.04	1.34
Top, Middle and Lower Dams																															
MW138	10/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.88	0.73	5.8	0.21	***4.5***	<0.01	0.43	2.2	0.41	0.16	0.34	<0.01	<0.01	0.041	<0.02	<0.02	<0.01	10.3	15.701
	10/10/2018	<0.01	0.02	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.99	0.98	5.5	0.24	***4.6***	<0.01	0.21	1.3	0.26	0.16	0.29	<0.01	<0.01	0.047	<0.02	<0.02	<0.01	10.1	14.597
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.88	1.1	6.19	0.35	***7.6***	<0.02	0.2	1.46	0.29	0.2	0.29	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	13.79	18.6
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.1	<0.04	<0.1	<0.04	<0.1	<0.04	<0.1	0.9	0.95	6.15	0.42	***8.81***	<0.04	0.2	1.41	0.29	0.19	0.37	<0.04	<0.04	0.04	<0.1	<0.04	<0.04	14.96	19.73
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.94	0.96	6.01	0.39	***6.91***	<0.02	0.2	1.5	0.26	0.2	0.4	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	12.9	17.8
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.88	0.77	5.17	0.4	***7.09***	<0.02	0.1	1.21	0.19	0.22	0.34	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	12.3	16.4
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.8	0.85	5.03	0.38	***6.04***	<0.02	0.1	1.17	0.24	0.18	0.32	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	11.1	15.2
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	1.3	1.18	6.75	0.64	***8.75***	<0.02	0.2	1.62	0.33	0.22	0.43	<0.02	<0.02	0.05	<0.05	<0.02	<0.02	15.5	21.5
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.89	1.03	6.03	0.46	***8.33***	<0.02	<0.1	1.44	0.31	0.2	0.43	<0.02	<0.02	0.04	<0.06	<0.02	<0.02	14.4	19.2
Base Boundary																															
MW002	13/09/2017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.2	0.12	1.38	0.03	***0.92***	<0.02	<0.1	0.13	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.3	2.82
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.02	<0.01	<0.05	0.16	0.084	1.4	0.024	***0.94***	<0.01	0.14	0.39	0.07	0.02	0.041	<0.01	<0.01	0.014	<0.02	<0.02	<0.01	2.34	3.283
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.17	0.092	1.3	0.027	***0.92***	<0.01	0.11	0.25	0.061	0.023	0.042	<0.01	<0.01	0.021	<0.02	<0.02	<0.01	2.22	3.016
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.075	0.042	0.77	0.024	***2.3***	<0.01	<0.05	0.061	<0.02	<0.01	0.022	<0.01	<0.01	0.022	<0.02	<0.02	0.017	3.07	3.333
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.099	0.093	1.5	0.039	***0.81***	<0.01	0.074	0.031	<0.02	<0.01	0.014	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	2.31	2.66
	19/04/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.08	1.14	0.06	***2.04***	<0.02	<0.1	0.14	0.03	<0.02	0.04	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	3.18	3.65
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	0.44	<0.02	***0.79***	<0.02	<0.1	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.23	1.41
	2/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.07	1.32	0.08	***2.88***	<0.02	<0.1	0.17	0.03	0.02	0.06	<0.02	<0.02	0.06	<0.05	<0.02	<0.02	4.2	4.79
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.13	2.19	0.09	***2.72***	<0.02	<0.1	0.18	0.03	0.02	0.06	<0.02	<0.02	0.05	<0.05	<0.02	<0.02	4.91	5.61
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.11	1.25	0.05	***1.28***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.53	2.88
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.05	0.74	0.03	***1.46***	<0.02	<0.1	0.07	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.2	2.46
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.05	0.53	0.02	***0.82***	<0.02	<0.1	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.35	1.52
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.13	1.93	0.09	***3.16***	<0.02	<0.1	0.2	0.04	0.02	0.06	<0.02	<0.02	0.07	<0.05	<0.02	0.02	5.09	5.89
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.06	0.61	<0.02	***0.78***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.39	1.57
	8/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	0.019	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.019
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	17/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	23/04/2020	<0.05	0.65	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	0.02	0.4	0.03	***0.87***	<0.02	<0.1	0.07	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.27	2.08
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09	0.09
	2/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01

AECOM

Table T7: Historical Groundwater PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	*PFOS*	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
MW003	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.05	0.74	0.03	***1.46***	<0.02	<0.1	0.07	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.2	2.46
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	24/08/2023	<0.05	0.18	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.18
MW117D	27/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.039	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.039	0.039
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	28/10/2020	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.1
	30/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	14/02/2022	<0.05	0.11	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.12	<0.02	0.11	<0.02	0.13	<0.02	<0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	0.24	0.38
MW117S	12/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.5	1.7	19	1	***4.3***	<0.01	0.41	4.2	0.57	0.34	0.58	<0.01	<0.01	0.038	<0.02	<0.02	<0.01	23.3	33.638
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.4	1.4	25	0.71	***6.2***	<0.01	0.34	4.4	0.53	0.31	0.51	<0.01	<0.01	0.035	<0.02	<0.02	<0.01	31.2	40.835
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.3	1.2	19	0.8	***6.3***	<0.01	0.32	3.7	0.46	0.25	0.46	<0.01	<0.01	0.029	<0.02	<0.02	<0.01	25.3	33.819
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.09	<0.04	<0.09	<0.04	<0.09	<0.04	<0.09	1.25	1.48	19.2	0.78	***6.32***	<0.04	0.4	3.7	0.52	0.31	0.5	<0.04	<0.04	0.04	<0.09	<0.04	<0.04	25.5	34.5
	30/03/2021	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	1.19	1.52	17.3	0.75	***6.57***	<0.02	0.3	3.33	0.51	0.26	0.5	<0.02	<0.02	0.05	<0.06	<0.02	<0.02	23.87	32.28
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	1.2	1.37	15.3	0.66	***7.47***	<0.05	<0.2	3.41	0.39	0.3	0.5	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	22.8	30.6
MW118	3/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.039	<0.01	0.045	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.045	0.084
	11/07/2019	<0.01	0.11	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.036	<0.01	0.037	<0.01	<0.02	<0.01	<0.05	0.028	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.037	0.211
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.04	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.09
	30/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	0.04	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.09
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.02	0.04	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.1
	18/02/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.03	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.07
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	0.03	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.08
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	<0.02	0.03	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.12
	25/08/2023	<0.05	0.2	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.02	0.04	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11	0.37
MW119	3/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.033	<0.01	0.024	<0.01	***0.78***	<0.01	<0.05	0.092	0.11	0.039	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.804	1.078
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.084	0.012	0.033	<0.01	<0.02	<0.01	0.11	0.2	0.19	0.093	0.031	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.033	0.753
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.1	0.014	0.04	<0.01	<0.02	<0.01	0.075	0.26	0.27	0.13	0.038	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.04	0.927
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	<0.02	0.04	<0.02	<0.01	<0.02	<0.1	0.2	0.22	0.11	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.75
	30/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	<0.02	0.03	<0.02	<0.01	<0.02	<0.1	0.15	0.16	0.09	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.63
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.23	<0.02	0.05	<0.02	<0.01	<0.02	0.1	0.23	0.22	0.15	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	1.08
	18/02/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.29	<0.02	0.06	<0.02	<0.02	<0.02	0.1	0.24	0.16	0.23	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	1.19
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.27	<0.02	0.05	<0.02	0.02	<0.02	<0.1	0.17	0.16	0.13	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	0.91
	7/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.36	<0.02	0.06	<0.02	0.04	<0.02	<0.1	0.19	0.2	0.15	0.13	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.1	1.13
	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.31	<0.02	0.06	<0.02	0.05	<0.02	0.1	0.21	0.18	0.14	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11	1.2
MW124	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	2/11/2020	<0.05	0.17	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.18
	31/03/2021	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.62	<0.25	<0.62	<0.25	<0.62	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<1.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.25	<0.25	<0.25
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW125I	26/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.036	0.017	0.13	<0.01	<0.02	<0.01	<0.05	0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.13	0.193
	11/07/2019	<0.01	0.012	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.037	0.021	0.18	<0.01	0.028	<0.01	<0.05	0.026	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.208	0.304
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.038	0.026	0.17	<0.01	0.028	<0.01	<0.05	0.026	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.198	0.288
	11/07/2019	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.02	0.16	<0.01	0.02	<0.01	<0.05	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.18	0.27
	2/11/2020	<0.05	0.11	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	0.03	0.17	<0.02	0.04	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.21	0.42
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	0.02	0.18	<0.02	0.05	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.23	0.32
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.03	0.19	<0.02	0.03	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.22	0.34
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.03	0.18	<0.02	0.03	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.21	0.32
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.15	<0.02	0.03	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.18	0.24
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	0.02	0.13	<0.02	0.02	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.15	0.23
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.15	<0.02	0.02	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.17	0.24
MW125S	18/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.085	0.05	0.3	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.3	0.435
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.051	0.022	0.21	<0.01	<0.02	<0.01	0.061	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.21	0.344
	2/11/2020	<0.05	0.41	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.03	0.24	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.26	0.75
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.03	0.21	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.21	0.29
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.27	0.19	0.96	<0.02	<0.01	<0.02	<0.1	0.43	0.09	0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.96	1.97
	2/03/2022	<0.05	0.5	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.38	0.24	1.36	<0.02	0.01	<0.02	<0.1	0.54	0.03	0.11	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.37	3.19
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.08	0.68	<0.02	0.02	<0.02	<0.1	0.21	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.7	1.17
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.05	0.58	<0.02	0.02	<0.02	<0.1	0.11	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.6	0.89
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.37	0.22	2.28	<0.02	0.03	<0.02	<0.1	0.75	0.1	0.04	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	2.31	3.83
Off-Base																															
MW205S	12/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.023	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.23**	0.023
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.023	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.23**	0.023
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.05
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06

AECOM

Table T7: Historical Groundwater PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

Location ID	Sample Date	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
MW212	11/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	3/11/2020	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.06
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.3	<0.05	<0.07	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	7/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW217	11/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.014	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.014	0.014
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.013	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.013	0.013
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.1	<0.04	<0.1	<0.04	<0.1	<0.04	<0.1	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.1	<0.04	<0.04	<0.01	<0.01
	18/08/2021	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	<0.1
	3/03/2022	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	**0.08**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.1**	0.16
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.06
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.04
MW220S	12/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	6/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.085	0.065	**0.38**	<0.01	<0.02	<0.01	<0.05	0.021	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.38**	0.551
	3/11/2020	<0.05	0.32	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.13	**0.64**	<0.02	0.04	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.68**	1.32
	1/04/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.29	0.23	**1.04**	<0.02	0.05	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.09**	1.63
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.12	**0.5**	<0.02	0.02	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.52**	0.82
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.08	**0.47**	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.48**	0.69
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.02	**0.13**	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.13**	0.19
	7/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.2	0.13	**0.68**	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.7**	1.03
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.09	**0.69**	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.72**	0.98
MW226	29/11/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	0.096	-	**0.53**	0.01	***0.27***	-	<0.05	0.072	<0.02	<0.01	0.017	<0.01	<0.01	0.019	<0.02	<0.02	<0.01	**0.8**	1.014
	9/08/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	<0.01	0.059	<0.01	**0.093**	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.152**	0.176
	9/08/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	<0.01	0.058	<0.01	**0.098**	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.156**	0.18
	9/08/2018	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.029	0.013	0.05	<0.01	0.06	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.11**	0.152
	4/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.029	0.01	0.048	<0.01	**0.079**	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.127**	0.166
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.04	**0.26**	<0.02	***0.16***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.42**	0.56
	30/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.05	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.08**	0.11
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	0.07	**0.43**	<0.02	**0.11**	<0.02	<0.1	0.08	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.54**	0.86
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.06	**0.32**	<0.02	**0.09**	<0.02	<0.1	0.08	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.41**	0.69
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.06	**0.26**	<0.02	0.04	<0.02	<0.1	0.07	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.3**	0.56
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.03	**0.2**	<0.02	0.05	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.25**	0.41
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.18	0.08	**0.65**	<0.02	0.07	<0.02	<0.1	0.11	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.72**	1.09
MW232	12/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.036	<0.01	**0.077**	<0.01	**0.085**	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.162**	0.198
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.066	0.011	**0.11**	<0.01	**0.099**	<0.01	<0.05	0.012	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.209**	0.298
	6/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.032	0.01	**0.095**	<0.01	**0.099**	<0.01	<0.05	0.011	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.194**	0.247
	3/11/2020	<0.10	0.13	<0.10	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.10	<0.10	**0.1**	<0.10	***0.17***	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	**0.27**	0.4
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	<0.02	**0.09**	<0.02	**0.1**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.19**	0.34
	20/08/2021	<0.05	<0.05	<0.05	<0.05	<0.1	<0.04	<0.1	<0.04	<0.1	<0.04	<0.1	0.05	<0.04	**0.09**	<0.04	0.06	<0.04	<0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.1	<0.04	<0.04	**0.15**	0.2
	3/03/2022	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	<0.02	**0.09**	<0.02	**0.1**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.19**	0.36
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	<0.02	**0.09**	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.16**	0.3
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	<0.02	**0.12**	<0.02	**0.13**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.25**	0.42
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	<0.02	**0.1**	<0.02	***0.17***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.27**	0.34
MW233	11/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	6/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	3/11/2020	<0.05	0.15	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.15
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	7/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.04	<0.02	**0.08**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.12**	0.12
MW235S	10/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.015	<0.01	0.019	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.034
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.04	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.04
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	<0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.05
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.02
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.03	<0.02	0.03	<0.02	**0.12**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	**0.15**	0.18
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.04
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.04
	8/03/2023	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.1	<0.1	<0.1
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.04

AECOM

Table T7: Historical Groundwater
PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		***0.07***						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
MW236S	11/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.068	0.034	**0.32**	<0.01	***0.33***	<0.01	<0.05	0.036	<0.02	<0.01	0.016	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.65**	0.804
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.044	0.011	**0.11**	<0.01	***0.14***	<0.01	<0.05	0.011	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.25**	0.316
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.054	0.023	**0.17**	<0.01	***0.18***	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.35**	0.427
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	**0.21**	<0.02	***0.16***	<0.02	<0.1	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.37**	0.49
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	**0.08**	<0.02	**0.09**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.17**	0.2
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.11	<0.04	<0.11	<0.04	<0.11	<0.04	<0.11	0.05	<0.04	**0.16**	<0.04	***0.15***	<0.04	<0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.11	<0.04	<0.04	**0.31**	0.36
	4/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	**0.24**	<0.02	***0.25***	<0.02	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.49**	0.58
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	**0.08**	<0.02	***0.19***	<0.02	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.27**	0.32
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	<0.02	**0.11**	<0.02	***0.17***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.28**	0.36
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.05	<0.02	**0.09**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.14**	0.18

AECOM

Table T8: Historical Surface Water
PFAS Analyical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005
NHMRC (2019) PFAS Recreational Water																							**10**							**2**	
PFAS NEMP 2020 Drinking Water* (HEPA, 2020)															0.07		0.07						0.56							0.07	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	**0.13**						**220**								
Location ID	**Sample Date**																														
Eastern PFAS Contamination Area																															
SW119	16/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.061	0.037	0.36	0.029	***0.88***	<0.01	<0.05	0.11	0.026	0.015	0.04	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.24	1.24
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.39	0.32	1.66	0.04	***0.77***	<0.02	<0.2	0.62	0.12	0.06	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.43**	4.05
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.05	0.33	<0.02	***0.42***	<0.02	<0.1	0.1	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.75	1.06
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.26	0.21	1.08	0.03	***0.41***	<0.02	<0.1	0.38	0.07	0.04	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.49	2.52
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.11	0.66	<0.02	***0.28***	<0.02	<0.1	0.18	<0.02	0.03	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.94	1.45
	10/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.26	0.16	0.8	0.04	***0.68***	<0.02	<0.1	0.34	0.06	0.04	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.48	2.44
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.55	<0.02	***0.46***	<0.02	<0.1	0.16	0.02	0.24	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.01	1.47
SW121	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.043	0.028	0.23	<0.01	***0.24***	<0.01	<0.05	0.054	<0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.47	0.47
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.043	0.028	0.22	<0.01	***0.22***	<0.01	0.085	0.14	0.027	0.017	0.02	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.44	0.44
	16/12/2018	<0.01	0.088	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.085	0.055	0.5	0.024	***0.77***	<0.01	<0.05	0.13	0.028	0.016	0.038	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.155	1.27
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	0.011	0.09	<0.01	0.065	<0.01	<0.05	0.024	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.9	0.155
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.25	0.21	1.3	0.029	***0.6***	<0.01	0.13	0.46	0.075	0.035	0.063	<0.01	<0.01	0.027	<0.02	<0.02	<0.01	1.27	1.9
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.35	0.32	2.13	0.06	***1.19***	<0.02	<0.3	0.71	0.12	0.06	0.09	<0.02	<0.02	0.06	<0.05	<0.02	<0.02	**3.32**	5.09
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.1	0.76	0.03	***0.52***	<0.02	<0.1	0.23	0.04	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.28	1.9
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.71	0.76	5.52	0.13	***1.14***	<0.02	0.2	1.58	0.21	0.13	0.22	<0.02	<0.02	0.06	<0.05	<0.02	<0.02	**6.66**	10.7
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.07	0.46	<0.02	***0.36***	<0.02	<0.1	0.13	<0.02	0.03	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.82	1.2
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.24	0.16	0.97	0.03	***0.48***	<0.02	<0.1	0.29	0.05	0.03	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.45	2.3
Former Fire Station																															
SW109	16/12/2018	<0.01	<0.01	0.071	<0.01	<0.02	<0.01	<0.05	0.047	<0.02	<0.01	<0.05	0.54	0.38	3.1	0.31	***5.2***	<0.01	0.34	1.1	0.39	0.13	0.4	<0.01	<0.01	0.034	<0.02	<0.02	<0.01	**8.3**	8.3
	29/03/2021	<0.50	<0.50	<0.50	<0.50	<1.24	<0.50	<1.24	<0.50	<1.24	<0.50	<1.24	7.25	7	55.4	3.53	***72.5***	<0.50	<2.5	20.4	4.12	2.43	5.61	<0.50	<0.50	<0.50	<1.24	<0.50	<0.50	**127.9**	178
	1/03/2022	<0.22	<0.22	<0.22	<0.22	<0.56	<0.22	<0.56	<0.22	<0.56	<0.22	<0.56	15.1	16.1	103	5.13	***89.2***	<0.22	4	41.1	4.36	8.21	**11.3**	<0.22	<0.22	<0.22	<0.56	<0.22	<0.22	**192**	298
	22/08/2022	<0.05	0.33	0.07	<0.05	<0.10	<0.04	<0.10	0.18	<0.10	<0.04	<0.10	7.41	8.48	55.6	5.98	***109***	0.08	1.4	14.8	3.34	2.63	6.36	<0.04	<0.04	0.33	<0.10	<0.04	<0.04	**165**	216
	6/03/2023	<0.1	0.1	<0.1	<0.1	<0.25	<0.1	<0.25	0.41	<0.25	<0.1	<0.25	7.23	6.83	51.4	3.57	***82.2***	<0.1	1.5	16.8	3.48	2.06	4.82	<0.1	<0.1	0.21	<0.25	<0.1	<0.1	**134**	181
	22/08/2023	<0.1	<0.13	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	6.25	5.69	30.8	1.06	***47.2***	<0.1	1.5	12	2.15	1.61	3.55	<0.1	<0.1	<0.1	<0.24	<0.1	<0.1	**78**	112
SW110	14/12/2018	<0.01	0.018	0.033	<0.01	<0.02	<0.01	<0.05	0.027	<0.02	<0.01	<0.05	0.74	0.69	21	0.32	***13***	<0.01	0.41	2.3	0.59	0.23	0.51	<0.01	<0.01	0.039	<0.02	<0.02	<0.01	0.66	34
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.3	0.19	2.2	0.037	***1.6***	<0.01	0.095	0.22	0.044	0.021	0.048	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**3.8**	3.8
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.062	0.038	0.41	<0.01	***0.25***	<0.01	<0.05	0.068	<0.02	<0.01	0.013	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**34**	0.66
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.23	0.16	1.47	0.05	***1.28***	<0.02	<0.1	0.25	0.06	0.02	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.75**	3.58
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	2.13	2.18	13	0.81	***17***	<0.02	0.6	4.98	0.48	0.98	1.14	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	**30**	43.3
	26/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.03
	7/10/2022	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	2.2	2.56	17.6	1.98	***32.9***	<0.05	0.7	4.62	1.01	0.62	1.51	<0.05	<0.05	0.14	<0.12	<0.05	<0.05	**50.5**	65.8
	15/03/2023	<0.09	<0.09	<0.09	<0.09	<0.23	<0.09	<0.23	<0.09	<0.23	<0.09	<0.23	4.68	4.93	33.3	2.4	***36.9***	<0.09	0.7	9.79	1.91	1.16	2.67	<0.09	<0.09	<0.12	<0.23	<0.09	<0.09	**70.2**	98.4
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	3.36	2.78	15	0.54	***23.2***	<0.05	0.6	4.72	0.84	0.67	1.48	<0.05	<0.05	0.07	<0.12	<0.05	<0.05	**38.2**	53.3
Lavarack Golf Course and Sporting Fields																															
SW129	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.02	<0.01	0.034	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.054	0.054
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.02	<0.01	0.036	<0.01	<0.05	0.025	0.021	0.03	0.02	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.056	0.152
	16/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.036	<0.01	0.065	<0.01	0.055	<0.01	<0.05	0.019	0.037	0.011	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.12	0.223
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.04	0.31	<0.02	***0.29***	<0.02	<0.1	0.08	0.09	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.6	0.94
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.04	0.31	<0.02	***0.2***	<0.02	0.1	0.15	0.17	0.04	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.51	1.14
SW130	10/12/2018	<0.01	0.016	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	0.013	0.079	<0.01	0.031	<0.01	<0.05	0.014	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.11	0.177
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.026	0.011	0.083	<0.01	0.023	<0.01	0.063	0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.106	0.226
	16/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.067	0.029	0.2	<0.01	0.13	<0.01	<0.05	0.032	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.33	0.458
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.09	0.58	0.03	***0.69***	<0.02	<0.1	0.12	0.03	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.27	1.68
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.04	0.19	<0.02	0.04	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.23	0.36
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.04	0.23	<0.02	0.08	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.31	0.45
Top, Middle and Lower Dams																															
SW139	2/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.12	0.085	0.74	0.025	***0.74***	<0.01	0.056	0.16	0.037	0.017	0.039	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.48	2.019
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.14	0.84	0.04	***0.98***	<0.02	<0.1	0.24	0.06	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.82	2.51
	29/10/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.12	0.089	0.77	0.025	***1.1***	<0.01	0.062	0.19	0.043	0.02	0.038	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.87	2.457
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.14	0.84	0.04	***0.99***	<0.02	<0.1	0.25	0.05	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.83	2.52
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.11	0.84	0.06	***1.56***	<0.02	<0.1	0.29	0.06	0.03	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.4**	3.16
	22/06/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.18	0.17	1.18	0.07	***1.6***	<0.02	<0.1	0.37	0.07	0.05	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.78**	3.79
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.19	0.17	1.28	0.08	***1.78***	<0.02	<0.1	0.35	0.06	0.04	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.06**	4.05
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.04	0.31	<0.02	***0.55***	<0.02	<0.1	0.08	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.86	1.06
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.1	0.76	0.05	***1.06***	<0.02	<0.1	0.21	0.04	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.82	2.45
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.13	1	0.06	***1.34***	<0.02	<0.1	0.28	0.06	0.03	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.34**	3.14
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.12	1.04	0.06	***1.35***	<0.02	<0.2	0.29	0.04	0.05	0.09	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	**2.39**	3.22
SW140	3/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.11	0.078	0.7	0.023	***0.71***	<0.01	<0.05	0.14	0.033	0.015	0.038	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.41	1.847
	3/10/2018	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.15	0.1	0.84	0.041	***0.92***	<0.01	<0.05	0.18	0.036	0.018	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.76	2.335
	3/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.12	0.082	0.72	0.025	***0.76***	<0.01	0.052	0.14	0.034	0.016	0.037	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.48	1.986
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.16	0.14	1.1	0.048	***1.6***	<0.01	0.081	0.35	0.067	0.035	0.085	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**2.7**	3.666
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.14	0.13	1.1	0.07	***1.5***	<0.01	0.06	0.35	0.05	0.04	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**2.6**	3.55
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.14	0.12	1	0.043	***1.5***	<0.01	0.063	0.28	0.063	0.031	0.078	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**2.5**	3.318
	5/08/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.17	0.14	1.1	0.049	***2.1***	<0.01	0.083	0.35	0.074	0.035	0.085	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**3.2**	4.186
	5/08/2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.16	0.13	1.1	0.08	***1.7***	<0.01	0.06	0.37	0.05	0.04	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**2.8**	3.8
	5/08/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.18	0.15	1.2	0.053	***1.6***	<0.01	0.068	0.39	0.074	0.04	0.093	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**2.8**	3.848
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.039	0.02	0.16	<0.01	***0.31***	<0.01	<0.05	0.038	<0.02	<0.01	0.011	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.47	0.578
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.12	0.89	0.05	***1.63***	<0.02	<0.1	0.25	0.05	0.02	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.52**	3.2
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.05	0.42	0.02	***0.62***	<0.02	<0.1	0.12	0.03	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.04	1.36
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.16	1.12	0.06	***1.57***	<0.02	<0.1	0.34	0.06	0.04	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.69**	3.61
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.03	0.21	<0.02	***0.37***	<0.02	<0.1	0.05	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.58	0.72
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.1	0.79	0.05	***1.09***	<0.02	<0.1	0.22	0.04	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.88	2.5
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.07	0.61	0.04	***0.91***	<0.02	<0.1	0.17	0.03	<0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.52	1.98
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.23	0.17	1.59	0.09	***2.66***	<0.02	0.1	0.25	0.04	0.03	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**4.25**	5.25

AECOM

Table T8: Historical Surface Water
PFAS Analyical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005
NHMRC (2019) PFAS Recreational Water																							**10**							**2**	
PFAS NEMP 2020 Drinking Water* (HEPA, 2020)															*0.07*		*0.07*						*0.56*							*0.07*	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
SW144	2/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.02	<0.01	0.07	<0.01	0.07	<0.01	<0.05	0.013	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.14	0.173
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.02	<0.01	0.099	<0.01	0.094	<0.01	<0.05	0.016	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.193	0.229
	5/08/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.021	<0.01	0.1	<0.01	0.096	<0.01	<0.05	0.018	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.196	0.235
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.03	0.011	0.073	<0.01	0.064	<0.01	<0.05	0.014	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.137	0.192
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.03	0.011	0.074	<0.01	0.082	<0.01	<0.05	0.013	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.156	0.21
	3/02/2020	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	0.07	<0.01	0.08	<0.01	<0.05	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.15	0.19
	13/05/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.06	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.13	0.13
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.09	<0.02	0.09	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.18	0.21
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.06	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.13	0.13
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.07	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12	0.12
	10/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.08	<0.02	0.11	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.19	0.21
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.1	<0.02	0.09	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.19	0.22
Remaining On-Base																															
SW113	12/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.026	<0.01	0.052	<0.01	0.054	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.165	0.106
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.038	0.012	0.1	<0.01	0.065	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.106	0.165
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.03	0.19	<0.02	***0.22***	<0.02	0.2	0.2	0.06	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.41	1.03
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.02	0.16	<0.02	0.1	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.26	0.33
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.14	<0.02	0.08	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.22	0.26
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.02	0.15	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.2	0.27
	10/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.15	<0.02	0.09	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.24	0.3
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	0.16	<0.02	0.07	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.23	0.36
SW120	12/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.017	<0.01	0.06	<0.01	0.087	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.147	0.147
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.02	0.17	<0.02	0.12	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.29	0.36
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.05	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09	0.11
Base Boundary																															
SW126	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.069	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.069
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW128	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.054	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.054
	16/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.028	<0.01	0.063	<0.01	0.1	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.163	0.191
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.05	<0.02	0.1	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.15	0.15
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.03	0.21	<0.02	0.13	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.34	0.49
	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.03	<0.02	<0.2	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.05
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.06	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09	0.09
SW132	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.021	<0.01	0.12	<0.01	***0.51***	<0.01	<0.05	0.033	<0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.63	0.694
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.023	0.011	0.12	<0.01	***0.8***	<0.01	<0.05	0.013	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.92	0.967
	16/12/2018	<0.01	0.012	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.048	0.032	0.28	<0.01	***0.47***	<0.01	<0.05	0.057	<0.02	<0.01	0.016	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.75	0.915
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.25	0.18	1.5	0.053	***1.5***	<0.01	0.12	0.27	0.062	0.034	0.079	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**3**	4.048
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.036	0.019	0.16	<0.01	***0.28***	<0.01	<0.05	0.037	<0.02	<0.01	0.011	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.44	0.543
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.06	0.38	<0.02	***0.74***	<0.02	<0.1	0.09	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.12	1.39
	1/04/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.24	0.2	1.16	0.06	***1.39***	<0.02	<0.1	0.27	0.06	0.04	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.55**	3.5
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.06	0.41	<0.02	***0.58***	<0.02	<0.1	0.09	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.99	1.25
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.1	0.82	0.05	***1.2***	<0.02	<0.1	0.2	0.04	0.02	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.02**	2.63
	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.32	0.29	2.52	0.15	***2.96***	<0.02	0.1	0.48	0.06	0.05	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**5.48**	7.07
SW133	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.04	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.08	0.08
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.04	0.41	<0.02	***0.26***	<0.02	<0.1	0.06	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.67	0.87
SW134	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	1/04/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW135	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.011	<0.01	0.038	<0.01	0.07	<0.01	<0.05	0.012	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.108	0.131
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.012	<0.01	0.037	<0.01	0.072	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.109	0.121
	12/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.027	<0.01	0.11	<0.01	0.1	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.21	0.237
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.041	0.011	0.1	<0.01	0.13	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.23	0.282
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	0.16	<0.02	***0.52***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.68	0.76
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.18	0.13	2.02	0.09	***3.62***	<0.02	<0.1	0.25	0.05	0.03	0.07	<0.02	<0.02	0.05	<0.05	<0.02	<0.02	**5.64**	6.49
	22/06/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.08	1.02	0.05	***2.44***	<0.02	<0.1	0.08	<0.02	<0.02	0.03	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	**3.46**	3.86
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.09	<0.02	***0.19***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.28	0.3
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.15	<0.02	***0.25***	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.4	0.46
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.21	0.12	0.81	0.03	***0.32***	<0.02	<0.1	0.28	0.06	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.13	1.92
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.05	0.32	<0.02	***0.32***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.64	0.78

AECOM

Table T8: Historical Surface Water
PFAS Analyical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005
NHMRC (2019) PFAS Recreational Water																							**10**							**2**	
PFAS NEMP 2020 Drinking Water* (HEPA, 2020)															*0.07*		*0.07*						*0.56*							*0.07*	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
SW136	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.022	0.011	0.094	<0.01	0.07	<0.01	<0.05	0.026	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.164	0.223
	10/12/2018	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.042	0.023	0.12	0.004	0.077	<0.001	0.023	0.036	0.008	0.003	0.006	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.197	0.343
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.023	0.011	0.11	<0.01	0.07	<0.01	<0.05	0.027	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.18	0.241
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	<0.01	0.11	<0.01	0.083	<0.01	0.052	0.043	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.193	0.312
	14/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.025	0.011	0.12	<0.01	0.1	<0.01	<0.05	0.021	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.22	0.277
	17/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.064	0.03	0.32	0.016	***0.69***	<0.01	0.064	0.05	<0.02	0.01	0.034	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.01	1.278
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.056	0.02	0.22	<0.01	***0.2***	<0.01	0.07	0.05	<0.02	<0.01	0.014	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.42	0.63
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.16	<0.02	***0.36***	<0.02	<0.1	0.05	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.52	0.62
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.1	<0.02	***0.25***	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.35	0.4
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	0.31	<0.02	***0.3***	<0.02	<0.1	0.07	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.61	0.78
Off-Base																															
SW203	8/12/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	0.025	-	0.098	<0.01	0.13	-	<0.05	0.014	<0.02	<0.01	0.012	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.228	0.279
	26/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.041	0.015	0.17	<0.01	***0.15***	<0.01	<0.05	0.015	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.32	0.391
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.078	0.053	0.65	0.033	***0.9***	<0.01	<0.05	0.087	<0.02	0.014	0.035	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.55	1.85
	4/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.047	0.022	0.18	<0.01	***0.35***	<0.01	<0.05	0.044	<0.02	<0.01	0.014	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.53	0.657
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.02	0.19	<0.02	***0.17***	<0.02	<0.1	0.04	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.36	0.48
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.04	0.31	<0.02	***0.42***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.73	0.93
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.05	0.37	<0.02	***0.36***	<0.02	<0.1	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.73	0.92
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	0.23	<0.02	***0.3***	<0.02	<0.1	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.53	0.65
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	0.19	<0.02	***0.21***	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.4	0.51
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.09	0.75	0.05	***1.05***	<0.02	<0.1	0.16	0.03	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.8	2.3
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.07	0.4	<0.02	***0.4***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.8	1.06
SW205	8/12/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	<0.01	-	<0.01	<0.01	<0.02	-	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	27/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.011	<0.01	0.011	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.057	0.071
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.014	<0.01	0.027	<0.01	0.03	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.011	0.022
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.01	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.05
	9/03/2023	<0.05	<0.05	<0.05	<0.13	<0.05	<0.13	<0.05	<0.13	<0.05	<0.13	<0.05	<0.02	<0.02	<0.01	<0.02	0.09	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.13	<0.05	<0.05	0.09	0.09
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
SW211	30/11/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	0.015	-	0.032	<0.01	0.041	-	0.058	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.073	0.146
	30/11/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	0.014	-	0.033	<0.01	0.047	-	0.058	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.08	0.152
	17/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.031	<0.01	0.037	<0.01	0.035	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.072	0.103
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.018	<0.01	0.019	<0.01	0.034	<0.01	<0.05	<0.01	<0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.053	0.081
	1/04/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.05
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.02	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.08
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.05	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09	0.11
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.06
SW212	30/11/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	0.044	-	0.063	<0.01	0.06	-	0.11	0.021	0.022	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.123	0.32
	17/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.079	0.022	0.18	<0.01	0.1	<0.01	<0.05	0.031	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.28	0.432
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.036	0.01	0.08	<0.01	0.044	<0.01	0.062	0.013	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.124	0.245
	1/04/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.06	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.08	0.11
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	<0.02	0.04	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11	0.21
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.08
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.04	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.09
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	0.18	<0.02	0.1	<0.02	<0.1	0.05	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.28	0.48
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
SW217	17/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.017	<0.01	0.011	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	0.011	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.011	0.039
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
	2/11/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.05
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.04	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.09
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW220	30/11/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	0.094	-	0.51	0.014	***0.45***	-	0.13	0.13	0.034	0.019	0.032	<0.01	<0.01	0.015	<0.02	<0.02	<0.01	0.96	1.428
	19/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.048	0.019	0.28	<0.01	***0.21***	<0.01	0.11	0.036	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.49	0.703
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.07	0.04	0.46	<0.01	***0.27***	<0.01	<0.05	0.07	<0.02	<0.01	0.014	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.73	0.924
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.073	0.044	0.47	<0.01	***0.29***	<0.01	0.2	0.073	0.022	<0.01	0.014	<0.01	<0.01	0.01	<0.02	<0.02	<0.01	0.76	1.196
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	0.04	0.38	0.01	***0.22***	<0.01	<0.05	0.07	0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.6	0.8
	4/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.073	0.036	0.42	<0.01	***0.29***	<0.01	<0.05	0.055	<0.02	<0.01	0.014	<0.01	<0.01	0.012	<0.02	<0.02	<0.01	0.71	0.9
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.04	0.37	<0.02	***0.45***	<0.02	<0.1	0.08	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.82	1.03
	1/04/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.09	0.73	0.03	***0.52***	<0.02	<0.1	0.14	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.25	1.67
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.19	0.13	1.23	0.04	***0.54***	<0.02	<0.1	0.24	0.03	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.77	2.46
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.11	1.05	0.04	***0.91***	<0.02	<0.1	0.19	<0.02	0.02	0.04	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	1.96	2.53
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.14	1.34	0.05	***0.74***	<0.02	<0.1	0.22	0.04	0.02	0.04	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	**2.08**	2.8
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.04	0.36	<0.02	***0.27***	<0.02	<0.1	0.06	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.63	0.8
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.29	0.23	1.77	0.03	***0.97***	<0.02	<0.1	0.36	0.05	0.03	0.06	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	**2.74**	3.81

AECOM

Table T8: Historical Surface Water
PFAS Analyical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005
NHMRC (2019) PFAS Recreational Water																							**10**							**2**	
PFAS NEMP 2020 Drinking Water* (HEPA, 2020)															*0.07*		*0.07*						*0.56*							*0.07*	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
SW227	24/01/2018	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	<0.01	-	<0.01	<0.01	<0.02	-	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	24/01/2018	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	<0.01	-	<0.01	<0.01	<0.02	-	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.0014	0.012
	2/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0037	<0.001	0.0014	<0.001	<0.002	<0.001	0.0069	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.01	<0.01
	2/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0035	<0.001	0.0012	<0.001	<0.002	<0.001	0.007	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0012	0.0117
	2/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0036	<0.001	0.0012	<0.001	<0.002	<0.001	0.0071	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0012	0.0119
	7/08/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	28/02/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW232	19/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.018	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.018	0.018
	19/09/2018	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.016	<0.01	0.023	<0.01	0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.043	0.059
	19/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.01	<0.01	0.018	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.018	0.028
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.09	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09	0.09
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.05	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.1	0.13
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.05	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09	0.09
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	0.09
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.11	<0.02	0.08	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.19	0.25
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.05	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09	0.11
SW233	19/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.058	0.025	0.24	<0.01	***0.26***	<0.01	0.055	0.032	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.5	0.67
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.088	0.054	0.5	0.015	***0.58***	<0.01	<0.05	0.084	0.021	0.011	0.029	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	1.08	1.382
	4/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.045	0.025	0.19	<0.01	***0.39***	<0.01	<0.05	0.049	<0.02	<0.01	0.016	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.58	0.715
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.02	0.18	<0.02	***0.24***	<0.02	<0.1	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.42	0.52
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.06	0.44	0.03	***0.69***	<0.02	<0.1	0.11	0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.13	1.47
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.08	0.57	0.03	***0.61***	<0.02	<0.1	0.16	0.02	0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.18	1.65
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	0.27	<0.02	***0.47***	<0.02	<0.1	0.05	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.74	0.9
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.09	0.68	0.04	***0.68***	<0.02	<0.1	0.15	0.04	0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.36	1.88
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.1	0.81	0.05	***1.12***	<0.02	<0.1	0.2	0.03	0.02	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.93	2.53
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.09	0.53	<0.02	***0.54***	<0.02	<0.1	0.16	0.02	<0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	1.07	1.53
SW242	24/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.009	<0.001	0.012	<0.001	0.011	<0.001	0.01	0.0021	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.023	0.0441
	24/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0087	<0.001	0.012	<0.001	0.0095	<0.001	0.009	0.0019	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0215	0.0411
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	<0.01	0.061	<0.01	0.037	<0.01	<0.05	0.013	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.098	0.135
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.07	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.13	0.16
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.05	<0.02	0.08	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.13	0.13
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.06	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12	0.12
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	0.16	<0.02	***0.25***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.41	0.49
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.06	<0.02	***0.34***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.4	0.42
SW243	24/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0044	<0.001	0.0036	<0.001	0.0023	<0.001	<0.005	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0059	0.0103
	24/08/2018	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.005	<0.001	0.004	<0.001	0.002	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.006	0.011
	24/08/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***7.8***	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**7.8**	7.8
	24/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0046	<0.001	0.0037	<0.001	0.0025	<0.001	<0.005	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0062	0.0108
	24/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0048	<0.001	0.0038	<0.001	0.0027	<0.001	0.0061	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0065	0.0174
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	4/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.011	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.011	0.011
	4/02/2020	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	4/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.03
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW244	2/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0029	<0.001	0.0016	<0.001	<0.002	<0.001	0.0067	0.0014	0.0022	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0016	0.0148
	2/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	0.0036	<0.002	<0.002	<0.005	0.0029	<0.001	0.0012	<0.001	<0.002	<0.001	0.0063	0.0016	0.0024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0012	0.018
	2/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.003	<0.001	0.0012	<0.001	<0.002	<0.001	0.0071	0.0015	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0012	0.0158
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	3/11/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	28/02/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01

AECOM

Table T8: Historical Surface Water
PFAS Analyical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005
NHMRC (2019) PFAS Recreational Water																							**10**							**2**	
PFAS NEMP 2020 Drinking Water* (HEPA, 2020)															*0.07*		*0.07*						*0.56*							*0.07*	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
SW245	3/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0021	<0.001	<0.001	<0.001	<0.002	<0.001	<0.005	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.01	0.0021
	3/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0022	<0.001	<0.001	<0.001	<0.002	<0.001	0.0053	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.01	0.0075
	3/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	0.0023	<0.002	<0.002	<0.005	0.0021	<0.001	<0.001	<0.001	<0.002	<0.001	<0.005	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.01	0.0044
	4/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	28/02/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01

AECOM

Table T9: Historical Sediment PFAS Anlaytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

Location ID	Sample Date	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFHxS and PFOS	Sum of PFAS
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR		0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002
Eastern PFAS Contamination Area																															
SD119	16/12/2018	<0.001	0.0089	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	0.0029	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	0.0118
	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0027	0.0032	0.0211	0.0006	0.0122	<0.0002	<0.001	0.0046	0.0008	0.0006	0.0011	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0333	0.0469
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0018	0.0017	0.0153	0.0008	0.0212	<0.0002	0.001	0.0051	0.001	0.0009	0.0018	<0.0002	<0.0002	0.0008	<0.0005	<0.0002	<0.0002	0.0365	0.0514
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0006
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0007	0.0007	0.0023	<0.0002	0.0018	<0.0002	<0.001	0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0041	0.0063
	10/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0021	<0.0002	0.0031	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0052	0.0055
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0018	0.0028	0.0321	0.0011	0.035	<0.0002	<0.001	0.0034	0.0006	0.0005	0.002	<0.0002	<0.0002	0.0019	<0.0005	<0.0002	<0.0002	0.0671	0.0812
SD121	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0008	0.0008	0.0104	0.0007	0.0461	<0.0002	<0.001	0.002	0.0002	0.0003	0.0016	0.0004	0.0005	0.0042	<0.0005	<0.0002	0.0012	0.0692	0.0565
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0002	0.0002	0.0034	0.0004	0.0198	<0.0002	<0.001	0.001	0.0003	<0.0002	0.0004	0.0003	0.0007	0.0005	<0.0005	<0.0002	0.0005	0.0277	0.0232
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0007	0.0012	0.0097	0.0004	0.0097	<0.0002	<0.001	0.0018	0.0003	0.0002	0.0006	<0.0002	<0.0002	0.0003	<0.0005	<0.0002	<0.0002	0.0194	0.0249
	22/04/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	0.0002	0.0052	0.0002	0.0043	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0095	0.0099
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0008	0.0008	0.0082	0.001	0.0541	<0.0002	<0.001	0.0021	0.0003	0.0003	0.002	<0.0002	<0.0002	0.0015	<0.0005	<0.0002	0.0003	0.0623	0.0714
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0025	0.0018	0.0222	0.0014	0.0963	<0.0002	<0.001	0.0027	<0.0002	0.0003	0.0013	0.0002	<0.0002	0.0024	<0.0005	<0.0002	<0.0002	0.118	0.131
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0016	<0.0002	0.0055	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0071	0.0073
Former Fire Station																															
SD109	16/12/2018	<0.001	<0.005	0.0023	<0.002	<0.002	<0.002	<0.005	0.0026	<0.002	<0.002	<0.005	<0.001	<0.001	0.0086	<0.001	0.12	<0.001	0.0065	0.0019	<0.002	<0.001	0.0011	<0.001	0.002	<0.001	<0.002	0.0049	<0.002	0.1286	0.1499
	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.001	0.0009	0.0067	0.0007	0.0307	<0.0004	<0.001	0.002	0.0005	0.0003	0.0007	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0374	0.0435
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.0021	<0.0005	<0.0002	<0.0005	0.0008	0.0009	0.009	0.001	0.079	0.0027	<0.001	0.0026	0.0005	0.0005	0.001	<0.0002	0.0002	<0.0002	<0.0005	0.0004	0.0004	0.088	0.1011
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0002	<0.0006	0.0031	<0.0006	<0.0002	<0.0006	0.0004	0.0005	0.0054	0.0009	0.122	0.0018	<0.001	0.0014	0.0006	0.0005	0.0008	<0.0002	0.0004	0.0003	<0.0006	0.0007	0.0005	0.127	0.139
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0002	<0.0006	0.0072	<0.0006	<0.0002	<0.0006	0.0055	0.0063	0.0635	0.0051	0.253	0.0017	<0.002	0.0153	0.0029	0.0021	0.0076	<0.0002	<0.0002	0.0005	<0.0006	0.0005	<0.0004	0.371	0.316
	22/08/2022	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0002	<0.0005	0.0048	<0.0005	<0.0002	<0.0005	0.0031	0.003	0.0297	0.0047	0.566	0.0035	<0.001	0.0071	0.0019	0.0011	0.005	<0.0002	0.0003	0.0007	<0.0005	0.0007	0.0004	0.596	0.633
	6/03/2023	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.0025	0.0056	<0.0025	<0.001	<0.0025	0.0024	0.002	0.033	0.0046	0.377	<0.001	<0.005	0.0059	<0.001	<0.001	0.0032	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.001	0.41	0.434
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	0.0005	<0.0012	0.0039	<0.0012	<0.0005	<0.0012	0.012	0.0134	0.124	0.0108	0.458	0.0015	<0.002	0.028	0.006	0.0042	0.0109	<0.0005	<0.0005	0.0008	<0.0012	0.0007	<0.0005	0.582	0.675
SD110	14/12/2018	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	0.0012	0.014	0.0014	0.17	<0.001	0.0046	0.0027	<0.002	<0.001	0.0015	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.184	0.1954
	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	0.0081	0.0064	0.0319	<0.0005	0.0098	<0.0005	<0.002	0.0131	0.0033	0.0018	0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0417	0.0756
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0016	0.0002	0.0074	<0.0002	<0.001	0.0006	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.009	0.01
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.0003	<0.0005	<0.0002	<0.0005	0.0013	0.0012	0.0091	0.001	0.0542	0.0005	<0.001	0.0021	0.0005	0.0003	0.0008	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	0.0002	0.0633	0.0715
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.0012	<0.0005	<0.0002	<0.0005	0.0012	0.0015	0.0168	0.0024	0.161	0.0013	<0.001	0.0027	0.0005	0.0003	0.0017	<0.0002	<0.0002	0.0003	<0.0005	<0.0002	0.0003	0.191	0.178
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0009	<0.0004	<0.0009	0.001	<0.0009	<0.0004	<0.0009	0.0011	0.0006	0.0068	0.0008	0.078	0.001	<0.002	0.0012	<0.0004	<0.0004	0.0008	<0.0004	0.0004	0.0004	<0.0009	0.0006	0.0006	0.0848	0.0933
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0018	0.0003	0.013	<0.0002	<0.001	0.0004	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0148	0.0157
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	0.0027	<0.0012	<0.0005	<0.0012	0.002	0.0024	0.0334	0.0057	0.669	0.0009	<0.002	0.0047	0.0009	0.001	0.0034	<0.0005	<0.0005	0.0007	<0.0012	0.0006	0.0006	0.702	0.728
Lavarack Golf Course and Sporting Fields																															
SD129	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007	0.0007
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0002	<0.0002	0.0003	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0014
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014	0.0014
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0005	0.0004	0.0063	0.0005	0.005	<0.0002	<0.001	0.0004	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0113	0.0135
SD130	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	0.0021	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0021	0.0021
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0083	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0008	<0.0002	<0.0005	<0.0004	<0.0002	0.0095	0.0095
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0011	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0011	0.0011
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0012
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018	0.0018
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0034	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0034	0.0034
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0002	<0.0002	0.0008	<0.0002	0.0062	<0.0002	<0.002	<0.0002	<0.0009	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0012	<0.0005	<0.0005	0.007	0.007
SD133	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007	0.0007
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.001	0.001
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007	0.0007
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0006
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.002	0.002
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0011	<0.0002	0.0112	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	0.0006	0.0123	0.0129
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0024	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0024	0.0024
SD134	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	1/04/2021	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	0.0018	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	0.0018	0.0018
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0009
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0012
	22/08/2023	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0002	<0.0025	<0.001	<0.0005	<0.0002	<0.0025	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.0002	<0.0025	<0.001	<0.001	<0.0002	0.0003
Top, Middle and Lower Dams																															
SD139	2/10/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0022	<0.001	0.02	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0222	0.0222
	29/10/2020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0010	0.0024	<0.0010	0.0227	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	0.0251	0.0251
	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	0.0023	<0.0005	0.0181	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0204	0.0204
	29/10/2020	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0071	<0.001	0.041	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0481	0.0481
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0005	0.0005	0.0069	0.0013	0.0825	0.0004	<0.001	0.0008	<0.0002	<0.0002	0.0005	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	0.0004	0.0894	0.094
	16/08/2021	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.001	0.0044	<0.001	0.0468	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.001	0.0512	0.0512
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0002	0.0003	0.0057	0.0015	0.0705	0.0004	<0.001	0.0004	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0794	0.0762
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0004	<0.0010	<0.0004	<0.0010	<0.0004	<0.0010	0.0005	<0.0004	0.0049	0.0006	0.0635	0.0004	<0.002	0.0009	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0010	<0.0004	<0.0004	0.0684	0.0708
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0039	0.0042	0.033	0.0024	0.0682	0.0003	<0.001	0.0047	0.0008	0.0003	0.0017	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.101	0.12
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0022	<0.0002	0.0134	<0.0002	<0.001	0.0006	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002

AECOM

Table T9: Historical Sediment PFAS Anlaytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFHxS and PFOS	Sum of PFAS
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002
Location ID	**Sample Date**																													
SD140	3/10/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0015	<0.001	0.04	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0415	0.0415
	3/10/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0016	<0.001	0.033	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0346	0.0346
	3/10/2018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00066	<0.0005	0.015	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.01566	0.01566
	5/08/2019	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0018	<0.001	0.03	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0318	0.0318
	5/08/2019	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0015	<0.001	0.017	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0185	0.0185
	5/08/2019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0009	<0.0005	0.015	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0159	0.0159
	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	0.0002	0.0024	0.0002	0.0216	0.0003	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.024	0.025
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	0.0002	0.0039	0.0006	0.0508	0.0011	<0.001	0.0006	0.0003	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0003	0.0003	0.0547	0.0582
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0002	0.0002	0.0027	0.0004	0.0222	0.0004	<0.001	0.0004	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0249	0.0267
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0167	0.0005	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0184	0.0179
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.001	<0.0002	0.017	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.018	0.018
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0002	<0.0006	<0.0002	<0.0006	0.0002	<0.0005	0.0004	<0.0002	0.0026	0.0003	0.0364	0.0006	<0.001	0.0004	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0008	0.039	0.0412
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0003	<0.0003	0.0041	<0.0004	0.0316	<0.0002	<0.001	0.0005	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0357	0.0364
SD144	13/05/2021	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.001	0.0054	0.0013	0.356	0.0013	<0.005	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.001	0.365	0.361
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0058	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.006	0.006
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0002	<0.0006	<0.0002	<0.0006	<0.0002	<0.0006	<0.0009	<0.0002	0.0024	<0.0002	0.0325	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0002	0.0349	0.0349
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	<0.0002	0.0201	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0205	0.0205
	10/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0006	0.0008	0.009	0.003	0.264	0.0009	<0.001	0.001	0.0002	<0.0002	0.0012	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.273	0.281
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0114	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0126	0.0126
Remaining On-Base																															
SD113	12/12/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	28/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0012
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0011	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0011	0.0011
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	10/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	0.0008
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
SD120	12/12/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	28/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.002	<0.002
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0014	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014	0.0014
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0034	<0.0002	0.0034	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0037	0.0037
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0006
	3/09/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0019	<0.0002	<0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0019	0.0019
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	<0.0002	0.0037	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0042	0.0042
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
Base Boundary																															
SD126	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0034	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0002	0.0003	0.0036	0.0041
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
SD128	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.001	0.001
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	<0.0002	0.004	0.001	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0005	<0.0003	<0.0002	0.0044	0.0054
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0004	<0.0002	0.0007	<0.0002	0.0034	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0041	0.0045
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0014	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0017	0.0017
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0026	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0029	0.0029
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	<0.0002	0.0125	0.0003	<0.001	0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0131	0.0138
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0034	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0037	0.0039
SD132	16/12/2018	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	0.02	<0.001	0.0054	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.02	0.0254
	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0031	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0039	0.0039
	1/04/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	<0.0002	0.0033	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0037	0.0037
	22/04/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0048	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.005	0.005
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0004	0.0002	0.0025	<0.0002	0.0108	0.0004	<0.001	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0133	0.0147
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0094	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0102	0.0105
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0036	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0044	0.0044
SD135	12/12/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	28/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	<0.0002	0.0025	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0031	0.0031
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0012
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0014	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014	0.0014
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0014	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0026	0.0029
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009

AECOM

Table T9: Historical Sediment PFAS Anlaytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFHxS and PFOS	Sum of PFAS
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002
Location ID	**Sample Date**																													
SD136	17/12/2018	<0.001	0.0092	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	0.0003	<0.002	0.04	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	0.0492
	28/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018	0.0018
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0051	<0.0002	<0.001	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0059	0.0064
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0015	<0.0002	0.0107	<0.0002	<0.001	0.0005	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0122	0.0129
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	0.0008
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0075	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0083	0.0083
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0006
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Off-Base																														
SD203	28/11/2017	-	<0.001	<0.001	-	<0.002	-	<0.005	<0.001	<0.002	-	<0.005	<0.001	-	0.0012	<0.001	0.012	-	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0132	0.0132
	26/09/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	0.0024	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0024	0.0024
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	<0.0002	0.0026	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0031	0.0031
	19/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	0.0002
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0084	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0096	0.0098
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0015	0.0015
SD205	28/11/2017	-	<0.001	<0.001	-	<0.002	-	<0.005	<0.001	<0.002	-	<0.005	<0.001	-	<0.001	<0.001	<0.002	-	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.0002
	27/09/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.0002	<0.0002
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.007	0.0007
	19/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0017	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0019	0.0021
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	0.0008
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0026	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0026	0.0026
SD211	30/11/2017	-	<0.001	<0.001	-	<0.002	-	<0.005	<0.001	<0.002	-	<0.005	<0.001	-	<0.001	<0.001	<0.002	-	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.0002
	1/04/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	0.0015	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0008	<0.0005	<0.0012	<0.0005	<0.0005	0.0015	0.0015
	19/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	3/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	25/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.001	0.001
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
SD212	1/04/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	19/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	0.0002
	3/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	25/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD217	17/12/2018	<0.001	0.0028	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	0.0023	<0.001	0.0086	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0023	0.0137
	17/12/2018	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	0.011	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.003	0.014
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0008	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.002
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	0.001
	2/11/2020	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.001	<0.002
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0011	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0011	0.0011
	19/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0002	<0.0002	0.0002	<0.0002	0.0018	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.002	0.0022
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0012
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0005	<0.0002	0.0011	<0.0002	0.0024	<0.0002	<0.001	0.0003	<0.0002	<0.0002	0.0007	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0035	0.0052
SD220	19/09/2018	<0.001	0.0011	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0036	<0.001	0.024	<0.001	0.0039	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0276	0.0326
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0025	<0.0002	0.013	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0155	0.0158
	1/04/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0013	<0.0005	<0.0013	<0.0005	<0.0013	<0.0005	<0.0005	0.0068	0.0024	0.0963	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	0.1031	0.1055
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0011	0.0007	0.0074	0.0008	0.0336	<0.0002	<0.001	0.0009	<0.0002	0.0002	0.0003	<0.0002	0.0004	0.0006	<0.0005	0.0002	0.0003	0.041	0.0465
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0042	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.005	0.005
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0005	0.0003	0.0062	0.0005	0.0228	<0.0002	<0.001	0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0005	<0.0002	<0.0002	0.029	0.0317
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0056	0.001	0.0166	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0222	0.0235
	21/08/2023	<0.001	<0.001	<0.001	<0.001	<0.0024	<0.001	<0.0024	<0.0002	<0.0024	<0.001	<0.0024	0.0004	0.0004	0.0059	0.0003	0.0192	<0.0002	<0.001	0.0011	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	0.0003	<0.0005	<0.001	<0.001	0.0251	0.0276
SD227	24/01/2018	-	<0.001	<0.001	-	<0.002	-	<0.005	<0.001	<0.002	-	<0.005	<0.001	-	<0.001	<0.001	<0.002	-	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	2/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	2/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	2/08/2018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	7/08/2019	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	0.0022	<0.005	<0.001	<0.001	<0.001	<0.001	0.014	<0.001	<0.002	0.002	<0.002	0.0015	0.01	0.018	0.0046	0.0017	<0.002	<0.002	<0.002	0.014	0.054
	3/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.002
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.002
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	28/02/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002

AECOM

Table T9: Historical Sediment PFAS Anlaytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFHxS and PFOS	Sum of PFAS
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002

Location ID	Sample Date																														
SD232	19/09/2018	<0.001	0.0011	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.0002	0.0011
	19/09/2018	<0.001	0.002	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.0002	0.002
	19/09/2018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00055	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	0.00055
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0023	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0025	0.0025
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0018	<0.0002	<0.001	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018	0.0026
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0018	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018	0.0018
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0007	<0.0002	0.0007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014	0.0014
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0012
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0032	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0035	0.0035
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0007	<0.0002	0.0025	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0032	0.0034
SD233	19/09/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0022	0.0022
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0023	0.0003	0.0267	<0.0002	<0.001	0.0005	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.029	0.03
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0011	<0.0002	0.0104	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0115	0.0115
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.001	<0.0002	0.0071	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0081	0.0081
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.002	<0.0002	0.0184	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0204	0.021
	15/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0003	0.0002	0.0022	<0.0002	0.0084	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0106	0.0111
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0003	0.0003	0.0028	0.0004	0.0206	0.0003	<0.001	0.0003	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0234	0.0253
SD242	24/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.001	0.001
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0034	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.0005	<0.0002	0.0002	0.0034	0.0042
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0023	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0023	0.0023
	22/04/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0051	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0005	<0.0002	<0.0002	0.0053	0.0057
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.001	0.001
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	<0.0002	0.0054	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.006	0.006
SD243	24/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	24/08/2018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002
	24/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	0.01
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.002
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD244	2/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	3/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.002	<0.002
	3/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.002	<0.002
	3/11/2020	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.002	<0.002
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	28/02/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD245	3/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	3/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.002	<0.002
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.002	<0.002
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	28/02/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002

Appendix C

Data Validation

DATA VALIDATION REPORT

Project No.:	60612487	**Validation by:**	[redacted]	**Date:**	14/09/2023
Client:	Department of Defence				
Site:	Lavarack Barracks (0229)				
Matrix type:	Groundwater, surface water, sediment	**Data verified by:**	[redacted]	**Date:**	14/09/2023
No. of primary samples:	38 groundwater, 24 surface water, 31 sediments				
Laboratory:	ALS (Brisbane), Eurofins (Brisbane)	**Project Manager:**	[redacted]		
Lab reference:	EB2326535, EB2326540, ET2304234, 1021562				

Key Issues:	No QA/QC issues were identified in the field or laboratory datasets that could have a material implication on data interpretation and therefore decision-making on the project. The data are considered appropriate for use to meet the project objectives.

Field QA/QC

Sampling personnel	Sampling was conducted by AECOM personnel from 21 August to 25 August 2023.
Sampling Methodology	Groundwater, surface water and sediment samples were collected using appropriate methods as identified within the main body of the report. Hydrasleeves were installed in the well for a minimum of 24 hours prior to collection. Surface water samples were collected from immediately below the water surface. Sediment samples were collected from within the water body, where possible.
Chain of Custody (COC)	COC documents were completed as per AECOM procedures.
Rinsate Blank	Rinsate blank samples were collected at a frequency of one rinsate per piece of reusable equipment per day of sampling (five in total). Concentrations of all analytes tested were reported below the LOR for rinsate samples.
Trip blanks	Trip blanks were included in the samples sent to the laboratory and all sample results were below laboratory limit of reporting (LOR)
Eskies to Laboratory	A total of four eskies of samples in three deliveries were submitted to ALS and one esky was submitted to Eurofins across the August 2023 sampling event.
Frequency of field QC	Field duplicates (intra-laboratory duplicates) and triplicates (inter-laboratory duplicates) were collected at the following frequencies: • Four duplicates and four triplicates for groundwater (10.5%) • Four duplicates and four triplicate for surface water (16.7%) • Four duplicates and four triplicate for sediment (12.9%). The target frequency of 10% for field duplicates and triplicates was achieved for all groundwater, surface water and sediment samples collected in this program. The reported frequency of field QC reporting is considered suitable for the purpose of this assessment.
Handling and preservation	Primary, duplicate, and triplicate samples were received preserved and chilled at the laboratory. All samples were received at the laboratory in appropriate sample containers with no sample container / preservation non-compliances noted.

Equipment Calibration	Calibration of the water quality meter was conducted by the equipment hire company and at the beginning of each sampling day, see **Appendix F**.
Laboratory QA/QC	
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Holding time compliance	Samples were extracted and analysed within recommended holding times, except for moisture content in sample 0229_SD119_230822. There is no guideline for moisture content. There were no new detections of PFAS at SD119 in August 2023, therefore the holding-time non-compliance is not considered to have impacted the interpretation of the data.
Laboratory Accreditation	The laboratory analysis was conducted by ALS Environmental Pty Ltd (Brisbane) a National Association of Testing Authorities (NATA) accredited laboratory. The triplicate samples were analysed at the Eurofins (Brisbane), also a NATA accredited laboratory.
Frequency of laboratory QC	The laboratory reported sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, except: • Laboratory duplicates for PFAS in water were below the expected rate of 10% in ET2304234 (at 6.49%). • Matrix spikes for PFAS in water and soil were below the expected rate of 5% in ET2304234. Water (2.60%%) and Soil (3.03%) • Matrix spikes for PFAS in water were below the expected rate of 5% in EB2326535 (0%) • Matrix spikes for PFAS in water were below the expected rate of 5% in EB2326540 (0%) Sufficient additional sample was provided to the laboratory to enable the analysis. The additional sample volume was not assigned by the laboratory system. AECOM are working with the laboratory to amend this issue going forwards.
Method Blank	All method blanks (MB) were within control limits.
Laboratory duplicate RPDs	Laboratory duplicate Relative Percentage Differences (RPD) were within control limits for all samples analysed
Laboratory control spike (LCS) recovery	All LCS recoveries were reported within acceptable limits.
Matrix spike recovery	All matrix spike (MS) recoveries were within control limits, except: • Perfluorooctane sulfonic acid (PFOS) in sediment in ET2304234-011 - MS recovery not determined due to the background level being greater than or equal to four times the spike level. This indicates that the concentration of PFAS within the sample was higher than the spiked concentration. • Sample 0229_MW233_230824 in batch ET2304234 returned recovery percentages lower than the data quality objectives in water for: - Perfluorononanoic acid (PFNA) (69% – 130%) – 66.2% - Perfluorononanoic acid (PFDA) (71% – 129%) – 56% - N--Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) (70% – 130%) – 46.2% • Sample SW233_230821 returned a recovery percentage greater than the data quality objective (70% – 130%) for 10:2 Fluorotelomer sulfonic acid (10:2 FTS) at 144%. Where the MS recoveries were less than the control limits, there is a potential that PFAS concentrations have been under-reported in these samples. Comparison of the results at MW233 for PFNA, PFDA, and EtFOSAA and 10:2 FTS at SW233 to the historical results indicates that the concentrations are the same, i.e., less than the LOR.

Surrogate spike recovery	Laboratory surrogate spike recoveries were all reported within control limits, except: • 13C8-PFOA in soil in 0229_QC103_230822 was reported at 78%, which is lower than the data quality objective nominated by the laboratory of 78.1-131%. • 13C8-PFOA in soil in 0229_SD110_230822 was reported at 65%, which is lower than the data quality objective nominated by the laboratory of 78.1-131%. PFOA results for the sediment data set in August 2023 were comparable to the previous results and there were no new detections of PFOA at SD110, therefore, the laboratory surrogate spike recovery non-compliance is not considered to impact the interpretation of results

QA/QC Field Data Evaluation	
Comparison of Field Observations and Laboratory Results	No anomalous results between field observations and analysis results were noted.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by AECOM.
Limits of reporting	Limits of Reporting (LORs) were sufficiently low to enable assessment against adopted screening levels.
Field duplicate RPDs	Field duplicate RPDs were reported within control limits except (the sample with the higher concentration is in bold): • Sum of PFAS (132%), Sum of PFHxS and PFOS (128%), and PFOS (113%) in **0229_SD232_230821** and 0229_QC101_230821 • Sum of PFAS (43%), Sum of PFHxS and PFOS (43%), and PFOS (48%) in 0229_SD132_230825 and **0229_QC108_230825** The reported concentrations for the primary/field duplicate samples were within the same order of magnitude. The variability between the primary and duplicate results is inferred to be the result of the heterogenous nature of the sediment sampled.
Field triplicate RPDs	Field triplicate RPDs were reported within control limits for all sample sets with the exception of the following (the sample with the higher concentration is in bold): • Sum of PFAS (67%), Sum of PFHxS and PFOS (61%), PFOS (53%) and PFHxS (64%0in 0229_SW113_230822 and **0229_QC202_230822** • PFHpS (54%) and PFHxA (38%) in **0229_MW072_230825** and QC211_230825 • PFOS (39%) in **0229_SW132_230825** and QC207_230825 The reported concentrations of the primary/field triplicate samples were within the same order of magnitude. The variability between the primary and triplicate results is inferred to be the result of slight differences in analytical methods employed by the two laboratories. This is demonstrated through the laboratory duplicate results all being within acceptable limits.

AECOM

Table C1:
QA/QC Soil Sample Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

Lab Report Number	ET2304234	ET2304234		1021562		ET2304234	ET2304234	
Field ID	0229_SD232_230821	0229_QC101_230821	RPD	0229_QC201_230821	RPD	0229_SD113_230822	0229_QC103_230822	RPD
Sampled Date/Time	21/08/2023 15:51	21/08/2023 15:51		21/08/2023 15:51		22/08/2023 14:46	22/08/2023 14:46	
Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate	

ChemName	Units	EQL								
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005 : 0.01 (Interlab)	<0.0005	<0.0005	0	<0.01	0	<0.0005	<0.0005	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.0002 : 0.01 (Interlab)	<0.0002	<0.0002	0	<0.01	0	<0.0002	<0.0002	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	mg/kg	0.0002 : 0.01 (Interlab)	<0.0002	<0.0002	0	<0.01	0	<0.0002	<0.0002	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluorobutanoic acid (PFBA)	mg/kg	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.005	0	<0.001	<0.001	0
Perfluorodecanesulfonic acid (PFDS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluorononanoic acid (PFNA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Sum of PFAS	mg/kg	0.0002 : 0.05 (Interlab)	**0.0034**	**0.0007**	**132**	<0.05	0	0.0003	<0.0002	40
Sum of PFHxS and PFOS	mg/kg	0.0002 : 0.005 (Interlab)	**0.0032**	**0.0007**	**128**	<0.005	0	0.0003	<0.0002	40
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.0002 : 0.005 (Interlab)	**0.0025**	**0.0007**	**113**	<0.005	0	0.0003	<0.0002	40
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0002 : 0.005 (Interlab)	0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002 : 0.005 (Interlab)	0.0007	<0.0002	111	<0.005	0	<0.0002	<0.0002	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

AECOM

Table C1:
QA/QC Soil Sample Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
August 2023

Lab Report Number	1021562		ET2304234	ET2304234		1021562		ET2304234	ET2304234		1021562	
Field ID	0229_QC203_230822	RPD	0229_SD132_230825	0229_QC108_230825	RPD	0229_QC208_230825	RPD	0229_SD128_230825	0229_QC109_230825	RPD	0229_QC209_230825	RPD
Sampled Date/Time	22/08/2023 14:46		25/08/2023 10:17	25/08/2023 10:17		25/08/2023 10:17		25/08/2023 11:00	25/08/2023 11:00		25/08/2023 11:00	
Sample Type	Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	

ChemName	Units	EQL											
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005 : 0.005 (Interlab)	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005 : 0.005 (Interlab)	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005 : 0.01 (Interlab)	<0.01	0	<0.0005	<0.0005	0	<0.01	0	<0.0005	<0.0005	0	<0.01	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005 : 0.005 (Interlab)	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	mg/kg	0.0005 : 0.005 (Interlab)	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.0002 : 0.01 (Interlab)	<0.01	0	<0.0002	<0.0002	0	<0.01	0	<0.0002	<0.0002	0	<0.01	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	mg/kg	0.0005 : 0.005 (Interlab)	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	mg/kg	0.0005 : 0.005 (Interlab)	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	mg/kg	0.0002 : 0.01 (Interlab)	<0.01	0	<0.0002	<0.0002	0	<0.01	0	<0.0002	<0.0002	0	<0.01	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	mg/kg	0.0005 : 0.005 (Interlab)	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorobutanoic acid (PFBA)	mg/kg	0.001 : 0.005 (Interlab)	<0.005	0	<0.001	<0.001	0	<0.005	0	<0.001	<0.001	0	<0.005	0
Perfluorodecanesulfonic acid (PFDS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	0.0002	0.0003	40	<0.005	0
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorononanoic acid (PFNA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005 : 0.005 (Interlab)	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Sum of PFAS	mg/kg	0.0002 : 0.05 (Interlab)	<0.05	0	**0.0044**	**0.0068**	**43**	<0.05	0	0.0039	0.0052	29	<0.05	0
Sum of PFHxS and PFOS	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	**0.0044**	**0.0068**	**43**	<0.005	0	0.0037	0.0049	28	<0.005	0
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	**0.0036**	**0.0059**	**48**	<0.005	0	0.0034	0.0046	30	<0.005	0
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.005	0	0.0008	0.0009	12	<0.005	0	0.0003	0.0003	0	<0.005	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Table C2:
QA/QC Water Sample
Analytical Results

Lab Report Number	ET2304234	ET2304234		1021562		ET2304234	ET2304234		1021562	
Field ID	0229_SW232_230821	0229_QC100_230821	RPD	0229_QC200_230821	RPD	0229_SW113_230822	0229_QC102_230822	RPD	0229_QC202_230822	RPD
Sampled Date/Time	21/08/2023 15:25	21/08/2023 15:25		21/08/2023 15:25		22/08/2023 14:44	22/08/2023 14:44		22/08/2023 14:44	
Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	

ChemName	Units	EQL										
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	0.02	<0.02	0	0.01	67	0.06	0.06	0	0.08	29
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	0.05	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.01	0	0.05	0.05	0	0.08	46
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.02	0.03	40	0.02	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	0.01	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	0.11	0.08	32	<0.1	10	0.36	0.39	8	**0.72**	**67**
Sum of PFHxS and PFOS	µg/L	0.01	0.09	0.08	12	0.07	25	0.23	0.25	8	**0.43**	**61**
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	0.04	0.03	29	0.02	67	0.07	0.08	13	**0.12**	**53**
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	0.01	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.05	0.05	0	0.05	0	0.16	0.17	6	**0.31**	**64**

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
* High RPDs are in bold (Acceptable RPDs for each EQL
multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (>
20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories.
Any methods in the row header relate to those used in the primary laboratory

Table C2:
QA/QC Water Sample
Analytical Results

Lab Report Number	ET2304234	ET2304234		1021562		ET2304234	ET2304234		1021562	
Field ID	0229_MW003_230824	0229_QC104_230824	RPD	0229_QC204_230824	RPD	0229_MW217_230824	0229_QC105_230824	RPD	0229_QC205_230824	RPD
Sampled Date/Time	24/08/2023 11:33	24/08/2023 11:33		24/08/2023 11:33		24/08/2023 11:37	24/08/2023 11:37		24/08/2023 11:37	
Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	

ChemName	Units	EQL										
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	0.18	0.12	40	0.12	40	<0.05	<0.05	0	<0.05	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.03	0.02	40	0.02	40
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	0.18	0.12	40	0.12	40	0.04	0.02	67	<0.1	0
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	0	<0.01	0	0.01	<0.01	0	0.04	120
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	0	<0.01	0	<0.02	<0.01	0	0.02	0
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	<0.01	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	0	<0.01	0	0.01	<0.01	0	0.02	67

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
"High RPDs are in bold (Acceptable RPDs for each EQL
multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (>
20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories.
Any methods in the row header relate to those used in the primary laboratory

Table C2:
QA/QC Water Sample
Analytical Results

Lab Report Number	ET2304234	ET2304234		1021562		ET2304234	ET2304234		1021562	
Field ID	0229_MW120_230824	0229_QC106_230824	RPD	0229_QC206_230824	RPD	0229_SW132_230825	0229_QC107_230825	RPD	0229_QC207_230825	RPD
Sampled Date/Time	24/08/2023 15:07	24/08/2023 15:07		24/08/2023 15:07		25/08/2023 10:18	25/08/2023 10:18		25/08/2023 10:18	
Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
ChemName	Units	EQL								
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	0.03	0.03	0	0.03	0	0.32	0.34	6	0.25	25
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	0.1	0.1	0	0.12	18
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.15	0.13	14	0.15	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.05	0.05	0	0.06	18
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.48	0.44	9	0.39	21
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.29	0.28	4	0.18	47
Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.06	0.07	15	0.06	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	0.19	0.17	11	0.16	17	7.07	6.38	10	5.76	20
Sum of PFHxS and PFOS	µg/L	0.01	0.16	0.14	13	0.13	21	5.48	4.83	13	4.3	24
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	0.12	0.1	18	0.08	40	2.96	2.38	22	**2**	**39**
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	0	0.14	0.14	0	0.15	7
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.04	0.04	0	0.05	22	2.52	2.45	3	2.3	9

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDS for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories.
Any methods in the row header relate to those used in the primary laboratory

Table C2:
QA/QC Water Sample
Analytical Results

Lab Report Number	ET2304234	ET2304234		1021562		ET2304234	ET2304234		1021562	
Field ID	0229_SW128_230825	0229_QC110_230825	RPD	0229_QC210_230825	RPD	0229_MW072_230825	0229_QC111_230825	RPD	0229_QC211_230825	RPD
Sampled Date/Time	25/08/2023 11:41	25/08/2023 11:41		25/08/2023 11:41		25/08/2023 12:23	25/08/2023 12:23		25/08/2023 12:23	
Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	

ChemName	Units	EQL										
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.1	<0.09	0	<0.01	0
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.1	<0.09	0	<0.01	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.1	<0.09	0	0.05	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.1	<0.09	0	<0.01	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.24	<0.24	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.1	<0.09	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.24	<0.24	0	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.24	<0.24	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.1	<0.09	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.24	<0.24	0	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.01	0	5.66	5.34	6	4.6	21
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.2	<0.1	0	<0.05	0	0.7	0.6	15	0.74	6
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.09	0	<0.1	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.09	0	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.09	0	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	2.26	2.16	5	**1.3**	**54**
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.99	0.93	6	0.93	6
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	9.73	9.45	3	**6.6**	**38**
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	1.59	1.53	4	1.8	12
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.1	<0.09	0	<0.05	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	5.44	5.54	2	4.2	26
Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	1.35	1.28	5	1.1	20
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.24	<0.24	0	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.09	0	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.09	0	<0.01	0
Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	0.05	0.05	0	<0.1	0	119	117	2	111.22	7
Sum of PFHxS and PFOS	µg/L	0.01	0.05	0.05	0	0.05	0	89.3	88.3	1	86	4
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	0.03	0.03	0	0.03	0	50	49.8	0	46	8
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	0	2.07	2.08	0	1.7	20
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.02	0.02	0	0.02	0	39.3	38.5	2	40	2

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
High RPDs are in bold (Acceptable RPDS for each EQL
multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (>
20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories.
Any methods in the row header relate to those used in the primary laboratory

C3: Rinsate Blank
Analytical Results

Lab Report Number	ET2304234	ET2304234	ET2304234	ET2304234	ET2304234	ET2304234	1021562-W
Field ID	0229_QC300_230821	0229_QC301_230822	0229_QC303_230824	0229_QC304_230825	0229_QC302_230823	0229_QC500_230828	0229_QC501_230828
Sampled Date/Time	21/08/2023 16:56	22/08/2023 16:50	24/08/2023 16:00	25/08/2023 13:19	23/08/2023 18:00	28/08/2023 12:23	28/08/2023 0:00
Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Trip Blank	Trip Blank

ChemName	Units	EQL							
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Appendix D

Chain of Custody Records

Environmental Division
Townsville
Work Order Reference
ET2304234

Telephone : +61 7 4773 0000

ALSCompass SAMPLING Intelligence

Custody Document for Submissions via ALS Compass App

Project: 60612487_3.1 Client: AECOM Project Manager: [redacted]

ALS Compass COC Reference: 56239 # Samples: 106 Phone:

Sampler:

Phone:

Turnaround Requirements: Standard ✓ 10 days Urgent

Special Instructions: Extra Volume for Lab QC
SW233 MW065 MW233
SW227 MW212
SW217 MW125I

ALS Use Only

Custody seal intact?	YES	NO	N/A
Free ice / frozen ice bricks upon receipt?	YES	NO	N/A
Random sample temperature on receipt?		°C	

Custody:

Relinquished by:	Received by:	Relinquished by:	Received by:
[redacted]	✓		[redacted] 29/8/23
Date / Time: 28/8/23 2pm	Date / Time: 28/8 2pm	Date / Time:	Date / Time: 8:00

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY: [redacted]	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME: 29/8/23 8:00	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0229_SW217_230821		21/08/2023 01:07 PM	WATER	ALS: 4 Non ALS: 0	No		Partial 1/4		Extra volume
002	0229_SW233_230821		21/08/2023 01:33 PM	WATER	ALS: 4 Non ALS: 0	No		Partial 1/4		Extra volume
003	0229_SW203_230821		21/08/2023 01:50 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
004	0229_SW205_230821		21/08/2023 02:45 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
005	0229_SW220_230821		21/08/2023 02:47 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
006	0229_SW242_230821		21/08/2023 03:08 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
007	0229_SW232_230821		21/08/2023 03:25 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
008	0229_QC100_230821		21/08/2023 03:26 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
009	0229_SW243_230821		21/08/2023 03:43 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
010	0229_SD217_230821		21/08/2023 03:45 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
011	0229_SD233_230821		21/08/2023 03:46 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
012	0229_SD203_230821		21/08/2023 03:47 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
013	0229_SD205_230821		21/08/2023 03:48 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
014	0229_SD220_230821		21/08/2023 03:49 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			

CHAIN OF CUSTODY

(ALS) COC#: **56239** *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME: 29/8/23 8:00	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
015	0229_SD242_230821		21/08/2023 03:50 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
016	0229_SD232_230821		21/08/2023 03:51 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
017	0229_QC101_230821		21/08/2023 03:52 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
018	0229_SD243_230821		21/08/2023 03:53 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
019	0229_QC300_230821		21/08/2023 04:56 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
020	0229_SD245_230822		22/08/2023 09:55 AM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
021	0229_SW245_230822		22/08/2023 09:57 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
022	0229_SD244_230822		22/08/2023 10:10 AM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
023	0229_SW244_230822		22/08/2023 10:11 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
024	0229_SD227_230822		22/08/2023 11:19 AM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
025	0229_SW227_230822		22/08/2023 11:20 AM	WATER	ALS: 4 Non ALS: 0	No		Partial 1/4		Extra volume for lab QC
026	0229_SD121_230822		22/08/2023 01:45 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
027	0229_SW119_230822		22/08/2023 01:52 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
028	0229_SD119_230822		22/08/2023 01:53 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			

CHAIN OF CUSTODY

ALS COC#: **56239** *ALS Laboratory:* ET Townsville

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

RELINQUISHED BY:	RECEIVED BY: [redacted]	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME: 29/8/23 8:00	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
029	0229_SD120_230822		22/08/2023 02:05 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
030	0229_SW135_230822		22/08/2023 02:15 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
031	0229_SD135_230822		22/08/2023 02:16 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
032	0229_SW113_230822		22/08/2023 02:44 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
033	0229_QC102_230822		22/08/2023 02:45 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
034	0229_SD113_230822		22/08/2023 02:46 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
035	0229_QC103_230822		22/08/2023 02:47 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			

CHAIN OF CUSTODY

(ALS) COC#: **56239** *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
036	0229_SW109_230822		22/08/2023 03:07 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
037	0229_SD109_230822		22/08/2023 03:08 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
038	0229_SW110_230822		22/08/2023 03:18 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
039	0229_SD110_230822		22/08/2023 03:19 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
040	0229_SW144_230822		22/08/2023 03:33 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
041	0229_SD144_230822		22/08/2023 03:34 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
042	0229_SW139_230822		22/08/2023 03:56 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		

CHAIN OF CUSTODY

(ALS) COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY: [redacted]	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME: 29/8/23 8:00	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comments:			

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
043	0229_SD139_230822		22/08/2023 03:57 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
044	0229_SW140_230822		22/08/2023 04:16 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
045	0229_SD140_230822		22/08/2023 04:17 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
046	0229_SW134_230822		22/08/2023 04:32 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
047	0229_SD134_230822		22/08/2023 04:33 PM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
048	0229_QC301_230822		22/08/2023 04:50 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
049	0229_MW002_230824		24/08/2023 09:18 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
050	0229_MW116_230824		24/08/2023 09:35 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
051	0229_MW232_230824		24/08/2023 09:43 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
052	0229_MW220S_230824		24/08/2023 09:43 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
053	0229_MW115_230824		24/08/2023 09:52 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
054	0229_MW205S_230824		24/08/2023 10:03 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
055	0229_MW236S_230824		24/08/2023 10:39 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
056	0229_MW235S_230824		24/08/2023 10:40 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY: [redacted]	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME: 29/8/23 8:00	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER [redacted]
PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
057	0229_MW125I_230824		24/08/2023 10:13 AM	WATER	ALS: 4 Non ALS: 0	No		Partial 1/4		Extra volume for lab QC
058	0229_MW125S_230824		24/08/2023 10:35 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
059	0229_MW233_230824		24/08/2023 10:54 AM	WATER	ALS: 4 Non ALS: 0	No		Partial 1/4		Extra volume
060	0229_MW212_230824		24/08/2023 11:20 AM	WATER	ALS: 4 Non ALS: 0	No		Partial 1/4		Extra volume
061	0229_MW124_230824		24/08/2023 11:02 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
062	0229_MW217_230824		24/08/2023 11:37 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
063	0229_MW003_230824		24/08/2023 11:33 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comments:			

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
064	0229_QC104_230824		24/08/2023 11:34 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
065	0229_QC105_230824		24/08/2023 11:38 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
066	0229_MW123I_230824		24/08/2023 11:46 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
067	0229_MW123S_230824		24/08/2023 12:02 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
068	0229_MW065_230824		24/08/2023 12:25 PM	WATER	ALS: 4 Non ALS: 0	No		Partial 1/4		Extra volume for lab QC
069	0229_MW122_230824		24/08/2023 01:56 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
070	0229_MW121_230824		24/08/2023 02:04 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME: 29/8/23 8:00	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
071	0229_MW120_230824		24/08/2023 03:07 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
072	0229_MW138_230824		24/08/2023 02:18 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
073	0229_MW101_230824		24/08/2023 02:33 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
074	0229_MW102_230824		24/08/2023 02:42 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
075	0229_QC106_230824		24/08/2023 03:08 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
076	0229_SD126_230825		25/08/2023 09:32 AM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
077	0229_MW135_230824		24/08/2023 03:16 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		

CHAIN OF CUSTODY

(ALS) COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
078	0229_MW114_230824		24/08/2023 03:25 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
079	0229_MW139_230824		24/08/2023 03:34 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
080	0229_MW105_230824		24/08/2023 03:50 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
081	0229_MW128_230824		24/08/2023 03:58 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
082	0229_QC303_230824		24/08/2023 04:00 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
083	0229_SD136_230825		25/08/2023 09:52 AM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
084	0229_SD133_230825		25/08/2023 10:03 AM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME: 29/8/23 8:00	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
085	0229_SD132_230825		25/08/2023 10:17 AM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
086	0229_QC108_230825		25/08/2023 10:18 AM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
087	0229_SW132_230825		25/08/2023 10:18 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
088	0229_QC107_230825		25/08/2023 10:19 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
089	0229_SD130_230825		25/08/2023 10:41 AM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
090	0229_SD129_230825		25/08/2023 10:50 AM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
091	0229_SD128_230825		25/08/2023 11:00 AM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			

CHAIN OF CUSTODY

(ALS) COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
092	0229_QC109_230825		25/08/2023 11:01 AM	SOIL	ALS: 1 Non ALS: 0	No	Partial 1/4			
093	0229_SW128_230825		25/08/2023 11:41 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
094	0229_QC110_230825		25/08/2023 11:42 AM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
095	0229_MW106_230825		25/08/2023 12:05 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
096	0229_MW074_230825		25/08/2023 12:12 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
097	0229_MW072_230825		25/08/2023 12:23 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
098	0229_QC111_230825		25/08/2023 12:23 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME: 29/8/23 8:00	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
099	0229_MW131_230825		25/08/2023 12:28 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
100	0229_MW141_230825		25/08/2023 12:39 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
101	0229_MW118_230825		25/08/2023 01:06 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
102	0229_MW119_230825		25/08/2023 01:13 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
103	0229_QC304_230825		25/08/2023 01:19 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
104	0229_MW018_230823		28/08/2023 12:09 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		
105	0229_QC302_230823		28/08/2023 12:11 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comments:			

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Sediments SEDIMENT	Waters WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
106	0229_QC500_230828		28/08/2023 12:23 PM	WATER	ALS: 2 Non ALS: 0	No		Partial 1/4		

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE	SAMPLE NAME	PARTIAL ANALYSIS GROUP NAME	MATRIX	SELECTED ANALYSIS NAME
001	0229_SW217_230821	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
002	0229_SW233_230821	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
003	0229_SW203_230821	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
004	0229_SW205_230821	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
005	0229_SW220_230821	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
006	0229_SW242_230821	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
007	0229_SW232_230821	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
008	0229_QC100_230821	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
009	0229_SW243_230821	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
010	0229_SD217_230821	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
011	0229_SD233_230821	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
012	0229_SD203_230821	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
013	0229_SD205_230821	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
014	0229_SD220_230821	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
015	0229_SD242_230821	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)

CHAIN OF CUSTODY

ALS COC#: 56239 ALS Laboratory: ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

032	0229_SW113_230822	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
033	0229_QC102_230822	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
034	0229_SD113_230822	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
035	0229_QC103_230822	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
036	0229_SW109_230822	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
037	0229_SD109_230822	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
038	0229_SW110_230822	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
039	0229_SD110_230822	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
040	0229_SW144_230822	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
041	0229_SD144_230822	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
042	0229_SW139_230822	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
043	0229_SD139_230822	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
044	0229_SW140_230822	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
045	0229_SD140_230822	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
046	0229_SW134_230822	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
047	0229_SD134_230822	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

064	0229_QC104_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
065	0229_QC105_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
066	0229_MW123I_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
067	0229_MW123S_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
068	0229_MW065_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
069	0229_MW122_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
070	0229_MW121_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
071	0229_MW120_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
072	0229_MW138_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
073	0229_MW101_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
074	0229_MW102_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
075	0229_QC106_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
076	0229_SD126_230825	Sediments SEDIMENT	SOIL	- EP231X (solids) PFAS - Full Suite (28 analytes)
077	0229_MW135_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
078	0229_MW114_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
079	0229_MW139_230824	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

096	0229_MW074_230825	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
097	0229_MW072_230825	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
098	0229_QC111_230825	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
099	0229_MW131_230825	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
100	0229_MW141_230825	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
101	0229_MW118_230825	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
102	0229_MW119_230825	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
103	0229_QC304_230825	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
104	0229_MW018_230823	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
105	0229_QC302_230823	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)
106	0229_QC500_230828	Waters WATER	WATER	- EP231X PFAS - Full Suite (28 analytes)

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

014	0229_SD220_230821	HDPE Soil Jar	200 mL	00621122069872	Grey	No	
015	0229_SD242_230821	HDPE Soil Jar	200 mL	00621122069816	Grey	No	
016	0229_SD232_230821	HDPE Soil Jar	200 mL	00621122069820	Grey	No	
017	0229_QC101_230821	HDPE Soil Jar	200 mL	00621122069908	Grey	No	
018	0229_SD243_230821	HDPE Soil Jar	200 mL	00621122069852	Grey	No	
019	0229_QC300_230821	HDPE (no PTFE)	20 mL	00350822015095	Grey	No	
019	0229_QC300_230821	HDPE (no PTFE)	20 mL	00350822015104	Grey	No	
020	0229_SD245_230822	HDPE Soil Jar	200 mL	00621019120251	Grey	No	
021	0229_SW245_230822	HDPE (no PTFE)	20 mL	00350822030590	Grey	No	
021	0229_SW245_230822	HDPE (no PTFE)	20 mL	00350822030766	Grey	No	
022	0229_SD244_230822	HDPE Soil Jar	200 mL	00621122069802	Grey	No	
023	0229_SW244_230822	HDPE (no PTFE)	20 mL	00350822030822	Grey	No	
023	0229_SW244_230822	HDPE (no PTFE)	20 mL	00350822030730	Grey	No	
024	0229_SD227_230822	HDPE Soil Jar	200 mL	00620322097804	Grey	No	
025	0229_SW227_230822	HDPE (no PTFE)	20 mL	00350822030828	Grey	No	
025	0229_SW227_230822	HDPE (no PTFE)	20 mL	00350822030687	Grey	No	
025	0229_SW227_230822	HDPE (no PTFE)	20 mL	00350822030762	Grey	No	
025	0229_SW227_230822	HDPE (no PTFE)	20 mL	00350822030800	Grey	No	
026	0229_SD121_230822	HDPE Soil Jar	200 mL	00621122069864	Grey	No	
027	0229_SW119_230822	HDPE (no PTFE)	20 mL	00350822015184	Grey	No	
027	0229_SW119_230822	HDPE (no PTFE)	20 mL	00350822015174	Grey	No	
028	0229_SD119_230822	HDPE Soil Jar	200 mL	00621122069833	Grey	No	
029	0229_SD120_230822	HDPE Soil Jar	200 mL	00620322097920	Grey	No	
030	0229_SW135_230822	HDPE (no PTFE)	20 mL	00350822015075	Grey	No	
030	0229_SW135_230822	HDPE (no PTFE)	20 mL	00350822015100	Grey	No	
031	0229_SD135_230822	HDPE Soil Jar	200 mL	00621122069858	Grey	No	
032	0229_SW113_230822	HDPE (no PTFE)	20 mL	00350822015001	Grey	No	

CHAIN OF CUSTODY

COC#: **56239** *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

050	0229_MW116_230824	HDPE (no PTFE)	20 mL	00350822028185	Grey	No	
050	0229_MW116_230824	HDPE (no PTFE)	20 mL	00350822028388	Grey	No	
051	0229_MW232_230824	HDPE (no PTFE)	20 mL	00350822015143	Grey	No	
051	0229_MW232_230824	HDPE (no PTFE)	20 mL	00350822015152	Grey	No	
052	0229_MW220S_230824	HDPE (no PTFE)	20 mL	00350822015195	Grey	No	
052	0229_MW220S_230824	HDPE (no PTFE)	20 mL	00350822015123	Grey	No	
053	0229_MW115_230824	HDPE (no PTFE)	20 mL	00350822028259	Grey	No	
053	0229_MW115_230824	HDPE (no PTFE)	20 mL	00350822028447	Grey	No	
054	0229_MW205S_230824	HDPE (no PTFE)	20 mL	00350822074435	Grey	No	
054	0229_MW205S_230824	HDPE (no PTFE)	20 mL	00350822015136	Grey	No	
055	0229_MW236S_230824	HDPE (no PTFE)	20 mL	00350822015059	Grey	No	
055	0229_MW236S_230824	HDPE (no PTFE)	20 mL	00350822015084	Grey	No	
056	0229_MW235S_230824	HDPE (no PTFE)	20 mL	00350822015023	Grey	No	
056	0229_MW235S_230824	HDPE (no PTFE)	20 mL	00350822015064	Grey	No	
057	0229_MW125I_230824	HDPE (no PTFE)	20 mL	00350822015102	Grey	No	
057	0229_MW125I_230824	HDPE (no PTFE)	20 mL	00350822015022	Grey	No	
057	0229_MW125I_230824	HDPE (no PTFE)	20 mL	00350822015000	Grey	No	
057	0229_MW125I_230824	HDPE (no PTFE)	20 mL	00350822015154	Grey	No	
058	0229_MW125S_230824	HDPE (no PTFE)	20 mL	00350822074440	Grey	No	
058	0229_MW125S_230824	HDPE (no PTFE)	20 mL	00350822015008	Grey	No	
059	0229_MW233_230824	HDPE (no PTFE)	20 mL	00350822015033	Grey	No	
059	0229_MW233_230824	HDPE (no PTFE)	20 mL	00350822014991	Grey	No	
059	0229_MW233_230824	HDPE (no PTFE)	20 mL	00350822074454	Grey	No	
059	0229_MW233_230824	HDPE (no PTFE)	20 mL	00350822014990	Grey	No	
060	0229_MW212_230824	HDPE (no PTFE)	20 mL	00350822015145	Grey	No	
060	0229_MW212_230824	HDPE (no PTFE)	20 mL	00350822074414	Grey	No	
060	0229_MW212_230824	HDPE (no PTFE)	20 mL	00350822015153	Grey	No	

CHAIN OF CUSTODY

ALS COC#: 56239 *ALS Laboratory:* ET Townsville

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

073	0229_MW101_230824	HDPE (no PTFE)	20 mL	00350822015003	Grey	No	
073	0229_MW101_230824	HDPE (no PTFE)	20 mL	00350822015204	Grey	No	
074	0229_MW102_230824	HDPE (no PTFE)	20 mL	00350822015214	Grey	No	
074	0229_MW102_230824	HDPE (no PTFE)	20 mL	00350822015067	Grey	No	
075	0229_QC106_230824	HDPE (no PTFE)	20 mL	00350822014993	Grey	No	
075	0229_QC106_230824	HDPE (no PTFE)	20 mL	00350822015062	Grey	No	
076	0229_SD126_230825	HDPE Soil Jar	200 mL	00620322097830	Grey	No	
077	0229_MW135_230824	HDPE (no PTFE)	20 mL	00350822028202	Grey	No	
077	0229_MW135_230824	HDPE (no PTFE)	20 mL	00350822028398	Grey	No	
078	0229_MW114_230824	HDPE (no PTFE)	20 mL	00350822028370	Grey	No	
078	0229_MW114_230824	HDPE (no PTFE)	20 mL	00350822028337	Grey	No	
079	0229_MW139_230824	HDPE (no PTFE)	20 mL	00350822030727	Grey	No	
079	0229_MW139_230824	HDPE (no PTFE)	20 mL	00350822030624	Grey	No	
080	0229_MW105_230824	HDPE (no PTFE)	20 mL	00350822030656	Grey	No	
080	0229_MW105_230824	HDPE (no PTFE)	20 mL	00350822030708	Grey	No	
081	0229_MW128_230824	HDPE (no PTFE)	20 mL	00350822030588	Grey	No	
081	0229_MW128_230824	HDPE (no PTFE)	20 mL	00350822030748	Grey	No	
082	0229_QC303_230824	HDPE (no PTFE)	20 mL	00350822030654	Grey	No	
082	0229_QC303_230824	HDPE (no PTFE)	20 mL	00350822030635	Grey	No	
083	0229_SD136_230825	HDPE Soil Jar	200 mL	00620322097895	Grey	No	
084	0229_SD133_230825	HDPE Soil Jar	200 mL	00620322097926	Grey	No	
085	0229_SD132_230825	HDPE Soil Jar	200 mL	00621122094316	Grey	No	
086	0229_QC108_230825	HDPE Soil Jar	200 mL	00620322097915	Grey	No	
087	0229_SW132_230825	HDPE (no PTFE)	20 mL	00350822015125	Grey	No	
087	0229_SW132_230825	HDPE (no PTFE)	20 mL	00350822014981	Grey	No	
088	0229_QC107_230825	HDPE (no PTFE)	20 mL	00350822015073	Grey	No	
088	0229_QC107_230825	HDPE (no PTFE)	20 mL	00350822015113	Grey	No	

CHAIN OF CUSTODY

COC#: **56239** *ALS Laboratory:* ET Townsville

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_23

SITE: 0229_2023 Wet Season

ORDER NO: 60612487 task 3.1

TURNAROUND REQUIREMENTS : 10 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE: [redacted]

QUOTE NO: TV/007/21 v2 - Compass / ET2021AECOMAU0001

EMAIL REPORTS TO: [redacted]

EMAIL INVOICES TO: [redacted]

104	0229_MW018_230823	HDPE (no PTFE)	20 mL	00350822074455	Grey	No	
105	0229_QC302_230823	HDPE (no PTFE)	20 mL	00350822074451	Grey	No	
105	0229_QC302_230823	HDPE (no PTFE)	20 mL	00350822015160	Grey	No	
106	0229_QC500_230828	HDPE (no PTFE)	20 mL	00352010056686	Grey	No	
106	0229_QC500_230828	HDPE (no PTFE)	20 mL	00352010056628	Grey	No	

Total Bottle Count: ALS: 193, Non ALS: 0

AECOM

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS : Townsville	SAMPLER: [redacted]		Destination Laboratory
PROJECT MANAGER (PM): [redacted]	SITE:	MOBILE: [redacted]	PHONE:	ALS
PROJECT NUMBER & TASK CODE: 60612487_3.1	P.O. NO.:	EMAIL REPORT TO: [redacted]		
RESULTS REQUIRED (Date): 10 day TAT	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)		

FOR LABORATORY USE ONLY (Circle appropriate)
Custody seal intact? Yes No N/A
SAMPLE TEMPERATURE
Chilled: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
Results in Esdat format

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		EP231X - PFAS Full suite (28 analytes)	EP231X (solids) - PFAS Full suite (28 analytes)										HOLD
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles												
	0229_SW211_230822	W	22/08/2023		2 x P	2	X											
	0229_SD211_230822	S	22/08/2023		1 x Jar	1		X										
	0229_SW212_230822	W	22/08/2023		2 x P	2	X											
	0229_SW212_230822	S	22/08/2023		1 x Jar	1		X										

Environmental Division
Brisbane
Work Order Reference
EB2326535

Telephone : + 61-7-3243 7222

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]	Date: 28/08/23	Name: [redacted]	Date: 28/8	Name: [redacted]	Date: 29/8/23	Con' Note No:
Of: AECOM	Time:	Of: ALS	Time: 3pm	Of: ALS	Time: 8:00	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page 1 of 1

AECOM

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS : Townsville	SAMPLER: [redacted]	Destination Laboratory
PROJECT MANAGER (PM): [redacted]	SITE:	MOBILE: [redacted] PHONE:	ALS
PROJECT NUMBER & TASK CODE: 60612487_3.1	P.O. NO.:	EMAIL REPORT TO: [redacted]	
RESULTS REQUIRED (Date): 10 day TAT	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (if applicable) Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
Results in Esdat format

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		EP231X - PFAS Full suite (28 analytes)											HOLD
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles												
	0229_MW226_230824	w	24/08/2023		2 X P	2	X											

Environmental Division
Brisbane
Work Order Reference
EB2326540

Telephone : +61-7-3243 7222

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]	28/08/2023	Name: [redacted]	Date: 28/8	Name: [redacted]	Date: 29/8/23	Con' Note No:
Of: AECOM	Time:	Of: ALS	Time: 2pm	Of: ALS	Time: 8:00	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page 1 of 1

107 – 111

ANZ

FQM - Generic Chain of Custody Form

1021562

AECOM

Q4AN(EV)-007-FM1

CONSULTANT: AECOM		ADDRESS : Townsville		SAMPLER: [redacted]	Destination Laboratory
PROJECT MANAGER (PM): [redacted]		SITE:		MOBILE: [redacted] PHONE:	Eurofins
PROJECT NUMBER & TASK CODE: 60612487_3.1		P.O. NO.:		EMAIL REPORT TO: [redacted]	
RESULTS REQUIRED (Date): 10 day TAT		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
Results in Esdat format

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		WATER - PFAS Standard 28 analytes	SOIL - PFAS Standard 28 analytes										HOLD
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles												
	0229_QC200_230821	W	21/08/2023		2 x P	2	X											
	0229_QC201_230821	S	21/08/2023		1 x Jar	1		X										
	0229_QC202_230822	W	22/08/2023		2 x P	2	X											
	0229_QC203_230822	S	22/08/2023		1 x Jar	1		X										
	0229_QC204_230824	W	24/08/2023		2 x P	2	X											
	0229_QC205_230824	W	24/08/2023		2 x P	2	X											
	0229_QC206_230824	W	24/08/2023		2 x P	2	X											
	0229_QC207_230825	W	25/08/2023		2 x P	2	X											
	0229_QC208_230825	S	25/08/2023		1 x Jar	1		X										
	0229_QC209_230825	S	25/08/2023		1 x Jar	1		X										
	0229_QC210_230825	W	25/08/2023		2 x P	2	X											
	0229_QC211_230825	W	25/08/2023		2 x P	2	X											
	0229_qc501_230828	w	28/08/2023		2 x P	2	X											

Date/Time: 29/8/23 9:25 AM
Chilled: Yes No
Temp: 9.1
Correction: -1.5 AK
Final Temp: 7.4

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]	Date: 28/08/23	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time:	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page 1 of 1

Appendix E

Laboratory Analytical Reports

CERTIFICATE OF ANALYSIS

Work Order	: **EB2326535**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: [redacted]
Project	: QLD_0229_PFASOMP_23	Date Samples Received	: 29-Aug-2023 08:00
Order number	: 60612487_3.1	Date Analysis Commenced	: 30-Aug-2023
C-O-C number	: ----	Issue Date	: 05-Sep-2023 10:21
Sampler	: [redacted]		
Site	: ----		
Quote number	: EN/004/23		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Soil Preparation, Stafford, QLD
	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD211_230822	0229_SD212_230822	----	----	----
				Sampling date / time	22-Aug-2023 00:00	22-Aug-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2326535-002	EB2326535-004	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**38.9**	**18.8**	**----**	**----**	**----**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0004**	**0.0003**	**----**	**----**	**----**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	**----**	**----**	**----**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	**----**	**----**	**----**
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	**----**	**----**	**----**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	**----**	**----**	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD211_230822	0229_SD212_230822	----	----	----
				Sampling date / time	22-Aug-2023 00:00	22-Aug-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2326535-002	EB2326535-004	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0004**	**0.0003**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0004**	**0.0003**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0004**	**0.0003**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**97.5**	**102**	----	----	----
13C8-PFOA	----	0.0002	%		**102**	**94.0**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW211_230822	0229_SW212_230822	----	----	----
				Sampling date / time	22-Aug-2023 00:00	22-Aug-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2326535-001	EB2326535-003	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.02**	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.02**	**0.03**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	**0.03**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW211_230822	0229_SW212_230822	----	----	----
				Sampling date / time	22-Aug-2023 00:00	22-Aug-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2326535-001	EB2326535-003	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.06**	**0.06**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.04**	**0.06**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.06**	**0.06**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**111**	**117**	----	----	----
13C8-PFOA	----	0.02	%		**104**	**105**	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2326535**	Page	: 1 of 9
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: [redacted]
Project	: QLD_0229_PFASOMP_23	Date Samples Received	: 29-Aug-2023
Order number	: 60612487_3.1	Date Analysis Commenced	: 30-Aug-2023
C-O-C number	: ----	Issue Date	: 05-Sep-2023
Sampler	: [redacted]		
Site	: ----		
Quote number	: EN/004/23		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Soil Preparation, Stafford, QLD
[redacted]	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5266187)									
EB2326479-001	Anonymous	EA055: Moisture Content	----	0.1	%	8.8	8.7	1.3	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5266186)									
EB2326479-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5266186)									
EB2326479-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5266186)									
EB2326479-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5266186) - continued									
EB2326479-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5266186)									
EB2326479-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5271298)									
EB2326444-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.02	0.04	47.6	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.09	0.12	35.9	0% - 50%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.02	0.03	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2326721-004	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5271298)									
EB2326444-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.11	0.11	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.07	0.07	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5271298) - continued									
EB2326444-001	Anonymous	EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.7	0.7	0.0	No Limit
EB2326721-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5271298)									
EB2326444-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2326721-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5271298) - continued									
EB2326721-004	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5271298)									
EB2326444-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2326721-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5271298)									
EB2326444-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	1.01	1.07	5.8	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.11	0.16	37.0	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	1.01	1.07	5.8	0% - 20%
EB2326721-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5266186)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	118	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	119	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	111	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	120	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	125	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	118	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5266186)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	99.0	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	126	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	112	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	114	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	111	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	107	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5266186)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	118	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	105	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	104	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	110	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	110	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	125	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5266186)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5266186) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	112	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	118	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	113	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	88.3	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5271298)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	88.1	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	90.1	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	89.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	102	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	104	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	96.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5271298)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	108	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	90.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	89.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	92.8	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	110	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	90.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	106	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	89.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	99.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5271298)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	92.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	104	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	81.8	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	87.8	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	98.1	62.6	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5271298) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	101	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	81.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5271298)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	100	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	87.0	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	107	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	91.5	64.2	133
EP231P: PFAS Sums (QCLot: 5271298)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5266186)							
EB2326479-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	118	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	119	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	113	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	116	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	111	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	116	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5266186)							
EB2326479-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	102	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	101	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	125	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	116	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	111	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	113	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	114	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	112	64.0	136

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5266186) - continued							
EB2326479-002	Anonymous	EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	105	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	103	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	111	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5266186)							
EB2326479-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	113	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	113	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	98.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	104	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	112	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	116	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	106	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5266186)							
EB2326479-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	118	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	121	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	90.4	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2326535**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0229_PFASOMP_23	Date Samples Received	: 29-Aug-2023
Site	: ----	Issue Date	: 05-Sep-2023
Sampler	: [redacted]	No. of samples received	: 4
Order number	: 60612487_3.1	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
	0				
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	18	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055)							
0229_SD211_230822, 0229_SD212_230822	**22-Aug-2023**	**----**	----	**----**	**30-Aug-2023**	05-Sep-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0229_SD211_230822, 0229_SD212_230822	**22-Aug-2023**	**30-Aug-2023**	18-Feb-2024	✓	**31-Aug-2023**	09-Oct-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
0229_SD211_230822, 0229_SD212_230822	**22-Aug-2023**	**30-Aug-2023**	18-Feb-2024	✓	**31-Aug-2023**	09-Oct-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
0229_SD211_230822, 0229_SD212_230822	**22-Aug-2023**	**30-Aug-2023**	18-Feb-2024	✓	**31-Aug-2023**	09-Oct-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0229_SD211_230822, 0229_SD212_230822	**22-Aug-2023**	**30-Aug-2023**	18-Feb-2024	✓	**31-Aug-2023**	09-Oct-2023	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
0229_SD211_230822, 0229_SD212_230822	**22-Aug-2023**	**30-Aug-2023**	18-Feb-2024	✓	**31-Aug-2023**	09-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0229_SW211_230822, 0229_SW212_230822	**22-Aug-2023**	**01-Sep-2023**	18-Feb-2024	✓	**01-Sep-2023**	18-Feb-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0229_SW211_230822,	0229_SW212_230822	**22-Aug-2023**	**01-Sep-2023**	18-Feb-2024	✓	**01-Sep-2023**	18-Feb-2024	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0229_SW211_230822,	0229_SW212_230822	**22-Aug-2023**	**01-Sep-2023**	18-Feb-2024	✓	**01-Sep-2023**	18-Feb-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0229_SW211_230822,	0229_SW212_230822	**22-Aug-2023**	**01-Sep-2023**	18-Feb-2024	✓	**01-Sep-2023**	18-Feb-2024	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0229_SW211_230822,	0229_SW212_230822	**22-Aug-2023**	**01-Sep-2023**	18-Feb-2024	✓	**01-Sep-2023**	18-Feb-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	18	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2326535**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: QLD_0229_PFASOMP_23	Page	: 1 of 3
Order number	: 60612487_3.1	Quote number	: EP2023AECOMAU0010 (EN/004/23)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 29-Aug-2023 08:00	Issue Date	: 30-Aug-2023
Client Requested Due Date	: 05-Sep-2023	Scheduled Reporting Date	: **05-Sep-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 4	Temperature	: 0.3, 2.8, 4.7, 2.9°C - Ice present
Receipt Detail	: SMALL ESKY	No. of samples received / analysed	: 4 / 4

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***Samples were originally received by ALS Townsville on 28/08/23, and forwarded to ALS Brisbane for analysis.**
- ***30/08/2023*: SRN has been resent to acknowledge change of Project Reference and Sample IDs. For any further information regarding these adjustments please contact client services at** [redacted].
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2326535-002	22-Aug-2023 00:00	0229_SD211_230822	✓	✓
EB2326535-004	22-Aug-2023 00:00	0229_SD212_230822	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2326535-001	22-Aug-2023 00:00	0229_SW211_230822	✓
EB2326535-003	22-Aug-2023 00:00	0229_SW212_230822	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	[redacted]
- Chain of Custody (CoC) (COC)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	[redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	[redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	[redacted]
- Chain of Custody (CoC) (COC)	Email	[redacted]
- Chromatogram (CHROM)	Email	[redacted]
- EDI Format - ESDAT (ESDAT)	Email	[redacted]
- Purchase Order Request Letter (PO_Request)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	[redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	[redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	[redacted]
- Chain of Custody (CoC) (COC)	Email	[redacted]
- Chromatogram (CHROM)	Email	[redacted]
- EDI Format - ESDAT (ESDAT)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	[redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	[redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	[redacted]
- Chain of Custody (CoC) (COC)	Email	[redacted]
- Chromatogram (CHROM)	Email	[redacted]
- EDI Format - ESDAT (ESDAT)	Email	[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **EB2326540**	Page	: 1 of 5
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: [redacted]
Project	: QLD_0229_PFASOMP_23	Date Samples Received	: 29-Aug-2023 08:00
Order number	: 60612487_3.1	Date Analysis Commenced	: 30-Aug-2023
C-O-C number	: ----	Issue Date	: 14-Sep-2023 16:06
Sampler	: [redacted]		
Site	: ----		
Quote number	: TV/007/21 v2 - Compass		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (14.09.2023): This report has been amended following the change of quote from EN/004/23 to TV/007/21 V2 as requested by client. All analysis results are as per the previous report
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW226_230824	----	----	----	----
				Sampling date / time	24-Aug-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2326540-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.18**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.08**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.65**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.07**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.11**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW226_230824	----	----	----	----
				Sampling date / time	24-Aug-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2326540-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1.09**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.72**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.01**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**115**	----	----	----	----
13C8-PFOA	----	0.02	%		**104**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2326540**	Page	: 1 of 6
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: [redacted]
Project	: QLD_0229_PFASOMP_23	Date Samples Received	: 29-Aug-2023
Order number	: 60612487_3.1	Date Analysis Commenced	: 30-Aug-2023
C-O-C number	: ----	Issue Date	: 14-Sep-2023
Sampler	: [redacted]		
Site	: ----		
Quote number	: TV/007/21 v2 - Compass		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5271298)									
EB2326444-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.02	0.04	47.6	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.09	0.12	35.9	0% - 50%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.02	0.03	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2326721-004	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5271298)									
EB2326444-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.11	0.11	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.07	0.07	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.7	0.7	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5271298) - continued									
EB2326721-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5271298)									
EB2326444-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2326721-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5271298)									
EB2326444-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5271298) - continued									
EB2326444-001	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2326721-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5271298)									
EB2326444-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	1.01	1.07	5.8	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.11	0.16	37.0	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	1.01	1.07	5.8	0% - 20%
EB2326721-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5271298)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	88.1	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	90.1	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	89.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	102	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	104	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	96.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5271298)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	108	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	90.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	89.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	92.8	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	110	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	90.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	106	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	89.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	99.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5271298)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	92.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	104	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	81.8	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	87.8	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	98.1	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	101	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	81.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5271298)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5271298) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	100	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	87.0	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	107	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	91.5	64.2	133
EP231P: PFAS Sums (QCLot: 5271298)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2326540**	Page	: 1 of 4
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0229_PFASOMP_23	Date Samples Received	: 29-Aug-2023
Site	: ----	Issue Date	: 14-Sep-2023
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612487_3.1	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	0				
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	18	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	Due for extraction	Evaluation	*Date analysed*	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0229_MW226_230824	**24-Aug-2023**	**01-Sep-2023**	20-Feb-2024	✓	**01-Sep-2023**	20-Feb-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0229_MW226_230824	**24-Aug-2023**	**01-Sep-2023**	20-Feb-2024	✓	**01-Sep-2023**	20-Feb-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0229_MW226_230824	**24-Aug-2023**	**01-Sep-2023**	20-Feb-2024	✓	**01-Sep-2023**	20-Feb-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0229_MW226_230824	**24-Aug-2023**	**01-Sep-2023**	20-Feb-2024	✓	**01-Sep-2023**	20-Feb-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0229_MW226_230824	**24-Aug-2023**	**01-Sep-2023**	20-Feb-2024	✓	**01-Sep-2023**	20-Feb-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	18	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2326540**		
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: QLD_0229_PFASOMP_23	Page	: 1 of 2
Order number	: 60612487_3.1	Quote number	: ET2021AECOMAU0001 (TV/007/21 v2 - Compass)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 29-Aug-2023 08:00	Issue Date	: 14-Sep-2023
Client Requested Due Date	: 05-Sep-2023	Scheduled Reporting Date	: **05-Sep-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 4	Temperature	: 0.3, 2.8, 4.7, 2.9°C - Ice present
Receipt Detail	: SMALL ESKY	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **14.09.2023: SRN has been resent to acknowledge the change of quote from EN/004/23 to TV/007/21 V2 as requested by client. For any further information regarding these adjustments please contact client services at [redacted].**
- ***Samples were originally received by ALS Townsville on 28/08/23, and forwarded to ALS Brisbane for analysis.**
- ***30/08/2023*: SRN has been resent to acknowledge change to Project Reference. For any further information regarding these adjustments please contact client services at [redacted].**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2326540-001	24-Aug-2023 00:00	0229_MW226_230824	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]
- A4 - AU Tax Invoice (INV) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]
- Purchase Order Request Letter (PO_Request) — Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **ET2304234**	Page	: 1 of 47
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PY LTD**	Laboratory	: Environmental Division Townsville
Contact	: MS [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
Telephone	: ----	Telephone	: [redacted]
Project	: QLD_0229_PFASOMP_23	Date Samples Received	: 29-Aug-2023 08:00
Order number	: 60612487 task 3.1	Date Analysis Commenced	: 30-Aug-2023
C-O-C number	: 56239	Issue Date	: 13-Oct-2023 17:24
Sampler	: [redacted]		
Site	: 0229_2023 Wet Season		
Quote number	: TV/007/21 v2 - Compass		
No. of samples received	: 106		
No. of samples analysed	: 106		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Soil Preparation, Stafford, QLD
	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X PFAS: Sample '0229_MW233_230824' (ET2304234-059) shows poor matrix spike recovery due to matrix interference. Confirmed by re-extraction and re-analysis.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (13/10/2023): This report has been amended following a change to the EP231X- PFAS: EtFOSAA, PFTrDA, PFUnDA and PFNA result reported for sample '0229_SD109_230822' (ET2304234-037) and '0229_SD110_230822' (ET2304234-039) due to an analyst error. All details are recorded in client query 22BNCC419 and a full investigation will be detailed in corrective action request 23BNC141.
- EP231X PFAS: Samples '0229_SD109_230822' (ET2304234_037) and '0229_SD110_230822' (ET2304234_039) required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: Particular samples required dilution prior to extraction due to the presence of high level contaminants & matrix interferences. LOR values have been adjusted accordingly.
- EP231X PFAS: The LOR values for particular analytes have been raised in particular samples due to matrix interference.
- EP231X PFAS: The high recovery matrix spike for 10:2 FTS is deemed acceptable as associated results are less than the limit of reporting.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD217_230821	0229_SD233_230821	0229_SD203_230821	0229_SD205_230821	0229_SD220_230821
				Sampling date / time	21-Aug-2023 15:45	21-Aug-2023 15:46	21-Aug-2023 15:47	21-Aug-2023 15:48	21-Aug-2023 15:49
Compound	CAS Number	LOR	Unit		ET2304234-010	ET2304234-011	ET2304234-012	ET2304234-013	ET2304234-014
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**44.1**	**55.5**	**20.4**	**32.9**	**60.3**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		**0.0005**	**0.0003**	<0.0002	<0.0002	**0.0004**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	**0.0003**	<0.0002	<0.0002	**0.0004**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0011**	**0.0028**	<0.0002	<0.0002	**0.0059**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	**0.0004**	<0.0002	<0.0002	**0.0003**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0024**	**0.0206**	**0.0015**	**0.0026**	**0.0192**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	**0.0003**	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0003**	**0.0003**	<0.0002	<0.0002	**0.0011**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0007**	**0.0003**	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0003**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		**0.0002**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0010
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0010
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0010
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0024

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD217_230821	0229_SD233_230821	0229_SD203_230821	0229_SD205_230821	0229_SD220_230821
				Sampling date / time	21-Aug-2023 15:45	21-Aug-2023 15:46	21-Aug-2023 15:47	21-Aug-2023 15:48	21-Aug-2023 15:49
Compound	CAS Number	LOR	Unit		ET2304234-010	ET2304234-011	ET2304234-012	ET2304234-013	ET2304234-014
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0024
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0024
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0024
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0010
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0010
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0052**	**0.0253**	**0.0015**	**0.0026**	**0.0276**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0035**	**0.0234**	**0.0015**	**0.0026**	**0.0251**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0050**	**0.0243**	**0.0015**	**0.0026**	**0.0266**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**89.5**	**89.0**	**110**	**100**	**104**
13C8-PFOA	----	0.0002	%		**100**	**99.5**	**100**	**99.5**	**102**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD242_230821	0229_SD232_230821	0229_QC101_230821	0229_SD243_230821	0229_SD245_230822
				Sampling date / time	21-Aug-2023 15:50	21-Aug-2023 15:51	21-Aug-2023 15:52	21-Aug-2023 15:53	22-Aug-2023 09:55
Compound	CAS Number	LOR	Unit		ET2304234-015	ET2304234-016	ET2304234-017	ET2304234-018	ET2304234-020
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**58.8**	**34.0**	**35.3**	**26.0**	**47.8**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0006**	**0.0007**	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0054**	**0.0025**	**0.0007**	<0.0002	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD242_230821	0229_SD232_230821	0229_QC101_230821	0229_SD243_230821	0229_SD245_230822
			Sampling date / time	21-Aug-2023 15:50	21-Aug-2023 15:51	21-Aug-2023 15:52	21-Aug-2023 15:53	22-Aug-2023 09:55
Compound	CAS Number	LOR	Unit	ET2304234-015	ET2304234-016	ET2304234-017	ET2304234-018	ET2304234-020
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0060**	**0.0034**	**0.0007**	<0.0002	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0060**	**0.0032**	**0.0007**	<0.0002	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0060**	**0.0034**	**0.0007**	<0.0002	<0.0002
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**105**	**102**	**100**	**95.5**	**95.0**
13C8-PFOA	----	0.0002	%	**101**	**102**	**104**	**102**	**81.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD244_230822	0229_SD227_230822	0229_SD121_230822	0229_SD119_230822	0229_SD120_230822
			Sampling date / time	22-Aug-2023 10:10	22-Aug-2023 11:19	22-Aug-2023 13:45	22-Aug-2023 13:53	22-Aug-2023 14:05
Compound	CAS Number	LOR	Unit	ET2304234-022	ET2304234-024	ET2304234-026	ET2304234-028	ET2304234-029
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**19.5**	**23.6**	**35.1**	**63.2**	**1.3**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0018**	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0028**	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	**0.0016**	**0.0321**	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0011**	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	**0.0055**	**0.0350**	**0.0004**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0006**	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	**0.0002**	**0.0034**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0005**	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0020**	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0019**	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD244_230822	0229_SD227_230822	0229_SD121_230822	0229_SD119_230822	0229_SD120_230822
			Sampling date / time	22-Aug-2023 10:10	22-Aug-2023 11:19	22-Aug-2023 13:45	22-Aug-2023 13:53	22-Aug-2023 14:05
Compound	CAS Number	LOR	Unit	ET2304234-022	ET2304234-024	ET2304234-026	ET2304234-028	ET2304234-029
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	<0.0002	<0.0002	**0.0073**	**0.0812**	**0.0004**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	**0.0071**	**0.0671**	**0.0004**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	<0.0002	**0.0073**	**0.0754**	**0.0004**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**86.5**	**106**	**108**	**116**	**116**
13C8-PFOA	----	0.0002	%	**83.5**	**93.5**	**94.5**	**87.0**	**94.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD135_230822	0229_SD113_230822	0229_QC103_230822	0229_SD109_230822	0229_SD110_230822
				Sampling date / time	22-Aug-2023 14:16	22-Aug-2023 14:46	22-Aug-2023 14:47	22-Aug-2023 15:08	22-Aug-2023 15:19
Compound	CAS Number	LOR	Unit		ET2304234-031	ET2304234-034	ET2304234-035	ET2304234-037	ET2304234-039
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**25.8**	**24.3**	**27.2**	**22.9**	**44.1**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0120**	**0.0020**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0134**	**0.0024**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.124**	**0.0334**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0108**	**0.0057**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0009**	**0.0003**	<0.0002	**0.458**	**0.669**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0015**	**0.0009**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.002	<0.002
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0060**	**0.0009**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0280**	**0.0047**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0042**	**0.0010**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0109**	**0.0034**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0009	<0.0008
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<0.0005
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<0.0007
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<0.0005
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0007**	<0.0007
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0012
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0039**	**0.0027**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0012

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD135_230822	0229_SD113_230822	0229_QC103_230822	0229_SD109_230822	0229_SD110_230822
			Sampling date / time	22-Aug-2023 14:16	22-Aug-2023 14:46	22-Aug-2023 14:47	22-Aug-2023 15:08	22-Aug-2023 15:19
Compound	CAS Number	LOR	Unit	ET2304234-031	ET2304234-034	ET2304234-035	ET2304234-037	ET2304234-039
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0006	<0.0005
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0009**	**0.0003**	<0.0002	**0.673**	**0.726**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0009**	**0.0003**	<0.0002	**0.582**	**0.702**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0009**	**0.0003**	<0.0002	**0.643**	**0.714**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**105**	**104**	**83.5**	**130**	**115**
13C8-PFOA	----	0.0002	%	**89.5**	**94.5**	**78.0**	**85.0**	**65.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD144_230822	0229_SD139_230822	0229_SD140_230822	0229_SD134_230822	0229_SD126_230825
			Sampling date / time	22-Aug-2023 15:34	22-Aug-2023 15:57	22-Aug-2023 16:17	22-Aug-2023 16:33	25-Aug-2023 09:32
Compound	CAS Number	LOR	Unit	ET2304234-041	ET2304234-043	ET2304234-045	ET2304234-047	ET2304234-076
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**32.7**	**41.3**	**64.9**	**60.2**	**1.3**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0003	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0003	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0012**	**0.0022**	**0.0041**	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0004	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0114**	**0.0134**	**0.0316**	<0.0003	**0.0004**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	**0.0006**	**0.0005**	**0.0003**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	**0.0002**	**0.0002**	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD144_230822	0229_SD139_230822	0229_SD140_230822	0229_SD134_230822	0229_SD126_230825
				Sampling date / time	22-Aug-2023 15:34	22-Aug-2023 15:57	22-Aug-2023 16:17	22-Aug-2023 16:33	25-Aug-2023 09:32
Compound	CAS Number	LOR	Unit		ET2304234-041	ET2304234-043	ET2304234-045	ET2304234-047	ET2304234-076
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0025	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0025	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0126**	**0.0164**	**0.0364**	**0.0003**	**0.0004**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0126**	**0.0156**	**0.0357**	<0.0002	**0.0004**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0126**	**0.0164**	**0.0364**	**0.0003**	**0.0004**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**98.5**	**113**	**106**	**79.0**	**106**
13C8-PFOA	----	0.0002	%		**95.5**	**95.0**	**91.5**	**97.0**	**95.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD136_230825	0229_SD133_230825	0229_SD132_230825	0229_QC108_230825	0229_SD130_230825
				Sampling date / time	25-Aug-2023 09:52	25-Aug-2023 10:03	25-Aug-2023 10:17	25-Aug-2023 10:18	25-Aug-2023 10:41
Compound	CAS Number	LOR	Unit		ET2304234-083	ET2304234-084	ET2304234-085	ET2304234-086	ET2304234-089
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**1.1**	**24.3**	**20.7**	**19.7**	**1.9**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	**0.0008**	**0.0009**	**0.0008**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	**0.0024**	**0.0036**	**0.0059**	**0.0062**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.002
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0009
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0012
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD136_230825	0229_SD133_230825	0229_SD132_230825	0229_QC108_230825	0229_SD130_230825
				Sampling date / time	25-Aug-2023 09:52	25-Aug-2023 10:03	25-Aug-2023 10:17	25-Aug-2023 10:18	25-Aug-2023 10:41
Compound	CAS Number	LOR	Unit		ET2304234-083	ET2304234-084	ET2304234-085	ET2304234-086	ET2304234-089
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0012
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0012
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	**0.0024**	**0.0044**	**0.0068**	**0.0070**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	**0.0024**	**0.0044**	**0.0068**	**0.0070**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	**0.0024**	**0.0044**	**0.0068**	**0.0070**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**114**	**110**	**107**	**95.0**	**97.5**
13C8-PFOA	----	0.0002	%		**96.0**	**98.5**	**97.0**	**98.0**	**96.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD129_230825	0229_SD128_230825	0229_QC109_230825	----	----
			Sampling date / time	25-Aug-2023 10:50	25-Aug-2023 11:00	25-Aug-2023 11:01	----	----
Compound	CAS Number	LOR	Unit	ET2304234-090	ET2304234-091	ET2304234-092	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**24.4**	**24.0**	**26.2**	**----**	**----**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	**0.0005**	<0.0002	<0.0002	**----**	**----**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	**0.0004**	<0.0002	<0.0002	**----**	**----**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0063**	**0.0003**	**0.0003**	**----**	**----**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	**0.0005**	<0.0002	<0.0002	**----**	**----**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0050**	**0.0034**	**0.0046**	**----**	**----**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	**0.0002**	**0.0003**	**----**	**----**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	**----**	**----**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0004**	<0.0002	<0.0002	**----**	**----**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0004**	<0.0002	<0.0002	**----**	**----**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	**----**	**----**
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	**----**	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD129_230825	0229_SD128_230825	0229_QC109_230825	----	----
			Sampling date / time	25-Aug-2023 10:50	25-Aug-2023 11:00	25-Aug-2023 11:01	----	----
Compound	CAS Number	LOR	Unit	ET2304234-090	ET2304234-091	ET2304234-092	--------	--------
				Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0135**	**0.0039**	**0.0052**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0113**	**0.0037**	**0.0049**	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0126**	**0.0037**	**0.0049**	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**95.0**	**108**	**104**	----	----
13C8-PFOA	----	0.0002	%	**95.5**	**93.5**	**100**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW217_230821	0229_SW233_230821	0229_SW203_230821	0229_SW205_230821	0229_SW220_230821
				Sampling date / time	21-Aug-2023 13:07	21-Aug-2023 13:33	21-Aug-2023 13:50	21-Aug-2023 14:45	21-Aug-2023 14:47
Compound	CAS Number	LOR	Unit		ET2304234-001	ET2304234-002	ET2304234-003	ET2304234-004	ET2304234-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.14**	**0.11**	<0.02	**0.29**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.09**	**0.07**	<0.02	**0.23**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**0.53**	**0.40**	<0.01	**1.77**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.03**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.54**	**0.40**	**0.02**	**0.97**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.02**	<0.02	<0.02	**0.05**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.16**	**0.06**	<0.02	**0.36**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.03**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.05**	**0.02**	<0.01	**0.06**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW217_230821	0229_SW233_230821	0229_SW203_230821	0229_SW205_230821	0229_SW220_230821
				Sampling date / time	21-Aug-2023 13:07	21-Aug-2023 13:33	21-Aug-2023 13:50	21-Aug-2023 14:45	21-Aug-2023 14:47
Compound	CAS Number	LOR	Unit		ET2304234-001	ET2304234-002	ET2304234-003	ET2304234-004	ET2304234-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**1.53**	**1.06**	**0.02**	**3.81**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**1.07**	**0.80**	**0.02**	**2.74**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**1.44**	**0.99**	**0.02**	**3.53**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**82.3**	**80.6**	**88.3**	**83.4**	**82.3**
13C8-PFOA	----	0.02	%		**107**	**106**	**110**	**105**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW242_230821	0229_SW232_230821	0229_QC100_230821	0229_SW243_230821	0229_QC300_230821
				Sampling date / time	21-Aug-2023 15:08	21-Aug-2023 15:25	21-Aug-2023 15:26	21-Aug-2023 15:43	21-Aug-2023 16:56
Compound	CAS Number	LOR	Unit		ET2304234-006	ET2304234-007	ET2304234-008	ET2304234-009	ET2304234-019
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.02**	**0.02**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.06**	**0.05**	**0.05**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.34**	**0.04**	**0.03**	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW242_230821	0229_SW232_230821	0229_QC100_230821	0229_SW243_230821	0229_QC300_230821
				Sampling date / time	21-Aug-2023 15:08	21-Aug-2023 15:25	21-Aug-2023 15:26	21-Aug-2023 15:43	21-Aug-2023 16:56
Compound	CAS Number	LOR	Unit		ET2304234-006	ET2304234-007	ET2304234-008	ET2304234-009	ET2304234-019
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.42**	**0.11**	**0.08**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.40**	**0.09**	**0.08**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.42**	**0.11**	**0.08**	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**91.5**	**91.7**	**84.3**	**87.5**	**84.9**
13C8-PFOA	----	0.02	%		**104**	**104**	**105**	**105**	**107**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW245_230822	0229_SW244_230822	0229_SW227_230822	0229_SW119_230822	0229_SW135_230822
				Sampling date / time	22-Aug-2023 09:57	22-Aug-2023 10:11	22-Aug-2023 11:20	22-Aug-2023 13:52	22-Aug-2023 14:15
Compound	CAS Number	LOR	Unit		ET2304234-021	ET2304234-023	ET2304234-025	ET2304234-027	ET2304234-030
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.09**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.05**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	**0.55**	**0.32**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.46**	**0.32**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	**0.02**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.16**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.24**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.04**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_SW245_230822	0229_SW244_230822	0229_SW227_230822	0229_SW119_230822	0229_SW135_230822
			Sampling date / time	22-Aug-2023 09:57	22-Aug-2023 10:11	22-Aug-2023 11:20	22-Aug-2023 13:52	22-Aug-2023 14:15
Compound	CAS Number	LOR	Unit	ET2304234-021	ET2304234-023	ET2304234-025	ET2304234-027	ET2304234-030
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	<0.01	**1.47**	**0.78**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	**1.01**	**0.64**
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	**1.47**	**0.73**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**84.8**	**87.3**	**92.0**	**86.3**	**89.5**
13C8-PFOA	----	0.02	%	**103**	**102**	**105**	**102**	**106**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW113_230822	0229_QC102_230822	0229_SW109_230822	0229_SW110_230822	0229_SW144_230822
				Sampling date / time	22-Aug-2023 14:44	22-Aug-2023 14:45	22-Aug-2023 15:07	22-Aug-2023 15:18	22-Aug-2023 15:33
Compound	CAS Number	LOR	Unit		ET2304234-032	ET2304234-033	ET2304234-036	ET2304234-038	ET2304234-040
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.06**	**0.06**	**6.25**	**3.36**	**0.03**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.02**	**0.03**	**5.69**	**2.78**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.16**	**0.17**	**30.8**	**15.0**	**0.10**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**1.06**	**0.54**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.07**	**0.08**	**47.2**	**23.2**	**0.09**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.10	<0.05	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	**1.5**	**0.6**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**2.15**	**0.84**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.05**	**0.05**	**12.0**	**4.72**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**1.61**	**0.67**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**3.55**	**1.48**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.10	**0.07**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.10	<0.05	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.10	<0.05	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.10	<0.05	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.10	<0.05	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.24	<0.12	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.10	<0.05	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.24	<0.12	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.24	<0.12	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW113_230822	0229_QC102_230822	0229_SW109_230822	0229_SW110_230822	0229_SW144_230822
				Sampling date / time	22-Aug-2023 14:44	22-Aug-2023 14:45	22-Aug-2023 15:07	22-Aug-2023 15:18	22-Aug-2023 15:33
Compound	CAS Number	LOR	Unit		ET2304234-032	ET2304234-033	ET2304234-036	ET2304234-038	ET2304234-040
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.24	<0.12	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.24	<0.12	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.10	<0.05	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.10	<0.05	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.10	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.13	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.10	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.10	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.36**	**0.39**	**112**	**53.3**	**0.22**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.23**	**0.25**	**78.0**	**38.2**	**0.19**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.34**	**0.36**	**105**	**49.9**	**0.22**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**89.5**	**85.8**	**86.7**	**84.1**	**102**
13C8-PFOA	----	0.02	%		**102**	**104**	**104**	**104**	**101**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW139_230822	0229_SW140_230822	0229_SW134_230822	0229_QC301_230822	0229_MW002_230824
				Sampling date / time	22-Aug-2023 15:56	22-Aug-2023 16:16	22-Aug-2023 16:32	22-Aug-2023 16:50	24-Aug-2023 09:18
Compound	CAS Number	LOR	Unit		ET2304234-042	ET2304234-044	ET2304234-046	ET2304234-048	ET2304234-049
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.16**	**0.23**	<0.02	<0.02	**0.09**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.12**	**0.17**	<0.02	<0.02	**0.06**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.04**	**1.59**	<0.01	<0.01	**0.61**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.06**	**0.09**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.35**	**2.66**	<0.01	<0.01	**0.78**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.2	**0.1**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.04**	**0.04**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.29**	**0.25**	<0.02	<0.02	**0.03**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.05**	**0.03**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.09**	**0.09**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW139_230822	0229_SW140_230822	0229_SW134_230822	0229_QC301_230822	0229_MW002_230824
				Sampling date / time	22-Aug-2023 15:56	22-Aug-2023 16:16	22-Aug-2023 16:32	22-Aug-2023 16:50	24-Aug-2023 09:18
Compound	CAS Number	LOR	Unit		ET2304234-042	ET2304234-044	ET2304234-046	ET2304234-048	ET2304234-049
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**3.22**	**5.25**	<0.01	<0.01	**1.57**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**2.39**	**4.25**	<0.01	<0.01	**1.39**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**3.02**	**4.99**	<0.01	<0.01	**1.51**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.8**	**99.5**	**99.8**	**98.2**	**94.3**
13C8-PFOA	----	0.02	%		**101**	**102**	**102**	**99.7**	**99.5**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW116_230824	0229_MW232_230824	0229_MW220S_230824	0229_MW115_230824	0229_MW205S_230824
				Sampling date / time	24-Aug-2023 09:35	24-Aug-2023 09:43	24-Aug-2023 09:43	24-Aug-2023 09:52	24-Aug-2023 10:03
Compound	CAS Number	LOR	Unit		ET2304234-050	ET2304234-051	ET2304234-052	ET2304234-053	ET2304234-054
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.15**	**0.07**	**0.17**	**0.14**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.03**	<0.02	**0.09**	**0.07**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.16**	**0.10**	**0.69**	**0.42**	**0.03**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	**0.17**	**0.03**	**0.14**	**0.03**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.05**	<0.02	<0.02	**0.14**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW116_230824	0229_MW232_230824	0229_MW220S_230824	0229_MW115_230824	0229_MW205S_230824
				Sampling date / time	24-Aug-2023 09:35	24-Aug-2023 09:43	24-Aug-2023 09:43	24-Aug-2023 09:52	24-Aug-2023 10:03
Compound	CAS Number	LOR	Unit		ET2304234-050	ET2304234-051	ET2304234-052	ET2304234-053	ET2304234-054
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.41**	**0.34**	**0.98**	**0.91**	**0.06**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.18**	**0.27**	**0.72**	**0.56**	**0.06**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.38**	**0.34**	**0.89**	**0.84**	**0.06**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**95.1**	**95.9**	**104**	**90.2**	**93.9**
13C8-PFOA	----	0.02	%		**99.4**	**98.2**	**99.8**	**100**	**102**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	0229_MW236S_230824	0229_MW235S_230824	0229_MW125I_230824	0229_MW125S_230824	0229_MW233_230824
				Sampling date / time	24-Aug-2023 10:39	24-Aug-2023 10:40	24-Aug-2023 10:13	24-Aug-2023 10:35	24-Aug-2023 10:54
					ET2304234-055	ET2304234-056	ET2304234-057	ET2304234-058	ET2304234-059
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.04**	**0.04**	**0.03**	**0.37**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.22**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.05**	<0.01	**0.15**	**2.28**	**0.04**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.09**	<0.01	**0.02**	**0.03**	**0.08**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	**0.10**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.04**	**0.75**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.04**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.04**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW236S_230824	0229_MW235S_230824	0229_MW125I_230824	0229_MW125S_230824	0229_MW233_230824
				Sampling date / time	24-Aug-2023 10:39	24-Aug-2023 10:40	24-Aug-2023 10:13	24-Aug-2023 10:35	24-Aug-2023 10:54
Compound	CAS Number	LOR	Unit		ET2304234-055	ET2304234-056	ET2304234-057	ET2304234-058	ET2304234-059
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.18**	**0.04**	**0.24**	**3.83**	**0.12**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.14**	<0.01	**0.17**	**2.31**	**0.12**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.18**	**0.04**	**0.24**	**3.61**	**0.12**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.4**	**99.6**	**95.3**	**95.8**	**93.5**
13C8-PFOA	----	0.02	%		**101**	**99.5**	**96.8**	**97.8**	**96.1**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW212_230824	0229_MW124_230824	0229_MW217_230824	0229_MW003_230824	0229_QC104_230824
				Sampling date / time	24-Aug-2023 11:20	24-Aug-2023 11:02	24-Aug-2023 11:37	24-Aug-2023 11:33	24-Aug-2023 11:34
Compound	CAS Number	LOR	Unit		ET2304234-060	ET2304234-061	ET2304234-062	ET2304234-063	ET2304234-064
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.03**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**0.01**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.02	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW212_230824	0229_MW124_230824	0229_MW217_230824	0229_MW003_230824	0229_QC104_230824
				Sampling date / time	24-Aug-2023 11:20	24-Aug-2023 11:02	24-Aug-2023 11:37	24-Aug-2023 11:33	24-Aug-2023 11:34
Compound	CAS Number	LOR	Unit		ET2304234-060	ET2304234-061	ET2304234-062	ET2304234-063	ET2304234-064
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	**0.18**	**0.12**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	**0.04**	**0.18**	**0.12**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.01**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**0.04**	**0.18**	**0.12**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.7**	**89.4**	**97.2**	**106**	**106**
13C8-PFOA	----	0.02	%		**97.8**	**97.6**	**101**	**102**	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC105_230824	0229_MW123I_230824	0229_MW123S_230824	0229_MW065_230824	0229_MW122_230824
				Sampling date / time	24-Aug-2023 11:38	24-Aug-2023 11:46	24-Aug-2023 12:02	24-Aug-2023 12:25	24-Aug-2023 13:56
Compound	CAS Number	LOR	Unit		ET2304234-065	ET2304234-066	ET2304234-067	ET2304234-068	ET2304234-069
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.02**	**0.21**	**0.78**	**0.52**	**0.18**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.14**	**0.74**	**0.73**	**0.16**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**0.41**	**6.93**	**9.73**	**1.14**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.81**	**0.46**	**0.10**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**5.08**	**9.93**	**3.56**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	**0.1**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.14**	**0.34**	**0.04**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.07**	**0.76**	**2.29**	**0.15**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**0.12**	**0.17**	**0.03**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.44**	**0.33**	**0.10**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_QC105_230824	0229_MW123I_230824	0229_MW123S_230824	0229_MW065_230824	0229_MW122_230824
			Sampling date / time	24-Aug-2023 11:38	24-Aug-2023 11:46	24-Aug-2023 12:02	24-Aug-2023 12:25	24-Aug-2023 13:56
Compound	CAS Number	LOR	Unit	ET2304234-065	ET2304234-066	ET2304234-067	ET2304234-068	ET2304234-069
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.06	<0.06	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.06	<0.06	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	**0.06**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**0.02**	**0.83**	**15.8**	**24.5**	**5.62**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	**0.41**	**12.0**	**19.7**	**4.70**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.02**	**0.69**	**14.2**	**23.3**	**5.36**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**96.3**	**95.1**	**116**	**106**	**98.8**
13C8-PFOA	----	0.02	%	**104**	**107**	**100**	**101**	**99.8**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW121_230824	0229_MW120_230824	0229_MW138_230824	0229_MW101_230824	0229_MW102_230824
				Sampling date / time	24-Aug-2023 14:04	24-Aug-2023 15:07	24-Aug-2023 14:18	24-Aug-2023 14:33	24-Aug-2023 14:42
Compound	CAS Number	LOR	Unit		ET2304234-070	ET2304234-071	ET2304234-072	ET2304234-073	ET2304234-074
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.04**	**0.03**	**0.89**	**0.14**	**0.42**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.04**	<0.02	**1.03**	**0.06**	**0.34**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.30**	**0.04**	**6.03**	**0.35**	**1.85**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.46**	<0.02	**0.16**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.11**	**0.12**	**8.33**	**0.69**	**1.92**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.31**	<0.02	**0.11**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**1.44**	**0.08**	**0.32**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**0.20**	<0.02	**0.08**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.43**	**0.02**	**0.19**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	**0.04**	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.06	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.06	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.06	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW121_230824	0229_MW120_230824	0229_MW138_230824	0229_MW101_230824	0229_MW102_230824
				Sampling date / time	24-Aug-2023 14:04	24-Aug-2023 15:07	24-Aug-2023 14:18	24-Aug-2023 14:33	24-Aug-2023 14:42
Compound	CAS Number	LOR	Unit		ET2304234-070	ET2304234-071	ET2304234-072	ET2304234-073	ET2304234-074
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.06	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.06	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.49**	**0.19**	**19.2**	**1.34**	**5.39**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.41**	**0.16**	**14.4**	**1.04**	**3.77**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.45**	**0.19**	**17.6**	**1.28**	**4.89**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**116**	**118**	**112**	**89.7**	**105**
13C8-PFOA	----	0.02	%		**96.2**	**96.7**	**97.4**	**95.1**	**98.6**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC106_230824	0229_MW135_230824	0229_MW114_230824	0229_MW139_230824	0229_MW105_230824
				Sampling date / time	24-Aug-2023 15:08	24-Aug-2023 15:16	24-Aug-2023 15:25	24-Aug-2023 15:34	24-Aug-2023 15:50
Compound	CAS Number	LOR	Unit		ET2304234-075	ET2304234-077	ET2304234-078	ET2304234-079	ET2304234-080
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	**0.06**	**3.14**	**0.09**	**6.77**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.07**	**3.57**	**0.11**	**9.38**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.04**	**0.51**	**18.0**	**1.10**	**61.6**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.03**	**0.82**	**0.05**	**2.81**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.10**	**0.42**	**3.97**	**2.15**	**37.6**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	**1.2**	<0.1	**0.8**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**1.61**	<0.02	**2.79**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**7.72**	**0.08**	**15.6**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**1.49**	<0.02	**1.68**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.02**	**2.39**	**0.04**	**3.10**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.30**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC106_230824	0229_MW135_230824	0229_MW114_230824	0229_MW139_230824	0229_MW105_230824
				Sampling date / time	24-Aug-2023 15:08	24-Aug-2023 15:16	24-Aug-2023 15:25	24-Aug-2023 15:34	24-Aug-2023 15:50
Compound	CAS Number	LOR	Unit		ET2304234-075	ET2304234-077	ET2304234-078	ET2304234-079	ET2304234-080
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**0.40**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.17**	**1.11**	**43.9**	**3.62**	**143**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.14**	**0.93**	**22.0**	**3.25**	**99.2**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.17**	**1.01**	**39.5**	**3.46**	**130**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.0**	**110**	**93.4**	**84.5**	**98.6**
13C8-PFOA	----	0.02	%		**98.2**	**97.6**	**103**	**97.1**	**96.7**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW128_230824	0229_QC303_230824	0229_SW132_230825	0229_QC107_230825	0229_SW128_230825
				Sampling date / time	24-Aug-2023 15:58	24-Aug-2023 16:00	25-Aug-2023 10:18	25-Aug-2023 10:19	25-Aug-2023 11:41
Compound	CAS Number	LOR	Unit		ET2304234-081	ET2304234-082	ET2304234-087	ET2304234-088	ET2304234-093
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**34.5**	<0.02	**0.32**	**0.34**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**40.6**	<0.02	**0.29**	**0.28**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**419**	<0.01	**2.52**	**2.45**	**0.02**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**35.9**	<0.02	**0.15**	**0.13**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**786**	<0.01	**2.96**	**2.38**	**0.03**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.96	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**5.3**	<0.1	**0.1**	**0.1**	<0.2
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**14.8**	<0.02	**0.06**	**0.07**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**99.0**	<0.02	**0.48**	**0.44**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**10.2**	<0.02	**0.05**	**0.05**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**32.7**	<0.01	**0.14**	**0.14**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**2.48**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.96	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.96	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.96	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.96	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<2.39	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		**5.16**	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<2.39	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<2.39	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW128_230824	0229_QC303_230824	0229_SW132_230825	0229_QC107_230825	0229_SW128_230825
				Sampling date / time	24-Aug-2023 15:58	24-Aug-2023 16:00	25-Aug-2023 10:18	25-Aug-2023 10:19	25-Aug-2023 11:41
Compound	CAS Number	LOR	Unit		ET2304234-081	ET2304234-082	ET2304234-087	ET2304234-088	ET2304234-093
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<2.39	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<2.39	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.96	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.96	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.96	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.96	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		**1.53**	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.96	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1490**	<0.01	**7.07**	**6.38**	**0.05**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1200**	<0.01	**5.48**	**4.83**	**0.05**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1400**	<0.01	**6.63**	**5.97**	**0.05**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.0**	**103**	**101**	**98.2**	**97.5**
13C8-PFOA	----	0.02	%		**102**	**102**	**102**	**104**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC110_230825	0229_MW106_230825	0229_MW074_230825	0229_MW072_230825	0229_QC111_230825
				Sampling date / time	25-Aug-2023 11:42	25-Aug-2023 12:05	25-Aug-2023 12:12	25-Aug-2023 12:23	25-Aug-2023 12:23
Compound	CAS Number	LOR	Unit		ET2304234-094	ET2304234-095	ET2304234-096	ET2304234-097	ET2304234-098
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.08	**6.76**	**5.66**	**5.34**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.03**	**6.52**	**5.44**	**5.54**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.02**	**0.32**	**51.6**	**39.3**	**38.5**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**3.09**	**2.26**	**2.16**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.03**	**0.40**	**59.5**	**50.0**	**49.8**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.09
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	**0.7**	**0.7**	**0.6**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**1.75**	**1.35**	**1.28**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.06**	**12.5**	**9.73**	**9.45**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**1.36**	**0.99**	**0.93**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.01**	**3.18**	**2.07**	**2.08**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	**1.89**	**1.59**	**1.53**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.09
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.09
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.09
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.09
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.25	<0.24	<0.24
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.09
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.25	<0.24	<0.24
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.25	<0.24	<0.24

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC110_230825	0229_MW106_230825	0229_MW074_230825	0229_MW072_230825	0229_QC111_230825
				Sampling date / time	25-Aug-2023 11:42	25-Aug-2023 12:05	25-Aug-2023 12:12	25-Aug-2023 12:23	25-Aug-2023 12:23
Compound	CAS Number	LOR	Unit		ET2304234-094	ET2304234-095	ET2304234-096	ET2304234-097	ET2304234-098
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.25	<0.24	<0.24
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.25	<0.24	<0.24
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.09
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.09
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.10	<0.10	<0.09
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	**0.11**	<0.10	<0.09
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.10	<0.10	<0.09
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.10	<0.10	<0.09
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.05**	**0.82**	**149**	**119**	**117**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.05**	**0.72**	**111**	**89.3**	**88.3**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.05**	**0.79**	**137**	**110**	**108**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.7**	**102**	**96.6**	**100**	**97.9**
13C8-PFOA	----	0.02	%		**103**	**102**	**102**	**100**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW131_230825	0229_MW141_230825	0229_MW118_230825	0229_MW119_230825	0229_QC304_230825
				Sampling date / time	25-Aug-2023 12:28	25-Aug-2023 12:39	25-Aug-2023 13:06	25-Aug-2023 13:13	25-Aug-2023 13:19
Compound	CAS Number	LOR	Unit		ET2304234-099	ET2304234-100	ET2304234-101	ET2304234-102	ET2304234-103
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**5.10**	**0.14**	**0.06**	**0.31**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**4.48**	**0.09**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**27.4**	**0.84**	**0.04**	**0.06**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**1.38**	**0.03**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**36.2**	**0.42**	**0.07**	**0.05**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.10	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**1.5**	<0.1	<0.1	**0.1**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**2.10**	**0.02**	<0.02	**0.18**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**13.1**	**0.19**	<0.02	**0.21**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**1.87**	<0.02	<0.02	**0.14**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**3.35**	**0.03**	<0.01	**0.15**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.10	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.10	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.10	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.10	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.10	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.24	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.10	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.24	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.24	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW131_230825	0229_MW141_230825	0229_MW118_230825	0229_MW119_230825	0229_QC304_230825
				Sampling date / time	25-Aug-2023 12:28	25-Aug-2023 12:39	25-Aug-2023 13:06	25-Aug-2023 13:13	25-Aug-2023 13:19
Compound	CAS Number	LOR	Unit		ET2304234-099	ET2304234-100	ET2304234-101	ET2304234-102	ET2304234-103
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.24	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.24	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.10	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.10	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.10	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.50**	<0.05	**0.20**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.10	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.10	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**97.0**	**1.76**	**0.37**	**1.20**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**63.6**	**1.26**	**0.11**	**0.11**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**91.1**	**1.64**	**0.37**	**1.20**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.7**	**104**	**96.8**	**97.7**	**95.2**
13C8-PFOA	----	0.02	%		**102**	**102**	**98.2**	**101**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW018_230823	0229_QC302_230823	0229_QC500_230828	----	----
				Sampling date / time	23-Aug-2023 11:33	23-Aug-2023 18:00	28-Aug-2023 12:23	----	----
Compound	CAS Number	LOR	Unit		ET2304234-104	ET2304234-105	ET2304234-106	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.11**	<0.02	<0.02	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.08**	<0.02	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.67**	<0.01	<0.01	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.04**	<0.02	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.47**	<0.01	<0.01	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.2	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.02**	<0.02	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.20**	<0.02	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.02**	<0.02	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.05**	<0.01	<0.01	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW018_230823	0229_QC302_230823	0229_QC500_230828	----	----
				Sampling date / time	23-Aug-2023 11:33	23-Aug-2023 18:00	28-Aug-2023 12:23	----	----
Compound	CAS Number	LOR	Unit		ET2304234-104	ET2304234-105	ET2304234-106	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**2.66**	<0.01	<0.01	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**2.14**	<0.01	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**2.54**	<0.01	<0.01	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.8**	**100**	**93.2**	----	----
13C8-PFOA	----	0.02	%		**99.9**	**107**	**105**	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids
(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(SOIL) EP231C: Perfluoroalkyl Sulfonamides
(SOIL) EP231P: PFAS Sums
(SOIL) EP231S: PFAS Surrogate
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)
(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **ET2304234**	Page	: 1 of 22
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: MS [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
Telephone	: ----	Telephone	: [redacted]
Project	: QLD_0229_PFASOMP_23	Date Samples Received	: 29-Aug-2023
Order number	: 60612487 task 3.1	Date Analysis Commenced	: 30-Aug-2023
C-O-C number	: 56239	Issue Date	: 13-Oct-2023
Sampler	: [redacted]		
Site	: 0229_2023 Wet Season		
Quote number	: TV/007/21 v2 - Compass		
No. of samples received	: 106		
No. of samples analysed	: 106		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Soil Preparation, Stafford, QLD
[redacted]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
[redacted]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5266529)									
ET2304234-010	0229_SD217_230821	EA055: Moisture Content	----	0.1	%	44.1	45.7	3.6	0% - 20%
ET2304234-022	0229_SD244_230822	EA055: Moisture Content	----	0.1	%	19.5	19.9	1.9	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5266549)									
ET2304234-041	0229_SD144_230822	EA055: Moisture Content	----	0.1	%	32.7	32.9	0.7	0% - 20%
ET2304234-090	0229_SD129_230825	EA055: Moisture Content	----	0.1	%	24.4	24.2	0.5	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5282996)									
ET2304234-028	0229_SD119_230822	EA055: Moisture Content	----	0.1	%	63.2	63.3	0.2	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5266528)									
ET2304234-010	0229_SD217_230821	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0005	0.0004	26.7	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0011	0.0011	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0024	0.0022	4.8	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
ET2304234-022	0229_SD244_230822	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5266548)									
ET2304234-041	0229_SD144_230822	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5266548) - continued									
ET2304234-041	0229_SD144_230822	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0012	0.0010	14.3	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0114	0.0100	13.5	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
ET2304234-090	0229_SD129_230825	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0005	0.0004	38.2	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0063	0.0056	12.1	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0005	0.0004	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0050	0.0049	0.0	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5266528)									
ET2304234-010	0229_SD217_230821	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0007	0.0005	31.4	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ET2304234-022	0229_SD244_230822	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5266548)									
ET2304234-041	0229_SD144_230822	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5266548) - continued									
ET2304234-041	0229_SD144_230822	EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ET2304234-090	0229_SD129_230825	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0004	0.0003	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5266528)									
ET2304234-010	0229_SD217_230821	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2304234-022	0229_SD244_230822	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5266528) - continued									
ET2304234-022	0229_SD244_230822	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5266548)									
ET2304234-041	0229_SD144_230822	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2304234-090	0229_SD129_230825	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5266528)									
ET2304234-010	0229_SD217_230821	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2304234-022	0229_SD244_230822	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5266528) - continued									
ET2304234-022	0229_SD244_230822	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5266548)									
ET2304234-041	0229_SD144_230822	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2304234-090	0229_SD129_230825	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5270217)									
ET2304234-001	0229_SW217_230821	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ET2304234-025	0229_SW227_230822	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5270218)									
ET2304234-057	0229_MW125I_230824	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.15	0.15	0.0	0% - 50%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5270218) - continued									
ET2304234-057	0229_MW125I_230824	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.03	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ET2304234-060	0229_MW212_230824	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5271074)									
ET2304234-068	0229_MW065_230824	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	9.73	10.5	7.6	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	9.93	10.2	2.5	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.52	0.55	6.5	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.73	0.82	11.7	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.46	0.49	6.2	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5270217)									
ET2304234-001	0229_SW217_230821	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ET2304234-025	0229_SW227_230822	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5270217) - continued									
ET2304234-025	0229_SW227_230822	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5270218)									
ET2304234-057	0229_MW125I_230824	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ET2304234-060	0229_MW212_230824	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5271074)									
ET2304234-068	0229_MW065_230824	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.33	0.34	0.0	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.34	0.36	4.7	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	2.29	2.24	2.1	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.17	0.18	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5270217)									
ET2304234-001	0229_SW217_230821	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5270217) - continued									
ET2304234-001	0229_SW217_230821	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ET2304234-025	0229_SW227_230822	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5270218)									
ET2304234-057	0229_MW125I_230824	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ET2304234-060	0229_MW212_230824	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5270218) - continued									
ET2304234-060	0229_MW212_230824	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5271074)									
ET2304234-068	0229_MW065_230824	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.06	<0.06	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5270217)									
ET2304234-001	0229_SW217_230821	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ET2304234-025	0229_SW227_230822	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5270218)									
ET2304234-057	0229_MW125I_230824	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ET2304234-060	0229_MW212_230824	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5271074)									
ET2304234-068	0229_MW065_230824	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5270217)									
ET2304234-001	0229_SW217_230821	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
ET2304234-025	0229_SW227_230822	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5270218)									
ET2304234-057	0229_MW125I_230824	EP231X: Sum of PFAS	----	0.01	µg/L	0.24	0.25	4.1	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.17	0.18	5.7	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.24	0.25	4.1	0% - 20%
ET2304234-060	0229_MW212_230824	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231P: PFAS Sums (QC Lot: 5270218) - continued									
ET2304234-060	0229_MW212_230824	EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5271074)									
ET2304234-068	0229_MW065_230824	EP231X: Sum of PFAS	----	0.01	µg/L	24.5	25.7	4.7	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	19.7	20.7	5.2	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	23.3	24.4	4.4	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5266528)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	87.3	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	88.9	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	94.1	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	88.6	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	89.2	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	79.6	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5266548)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	80.0	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	81.6	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	86.0	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	84.4	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	103	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	95.0	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5266528)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	97.9	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.4	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.0	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.8	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.2	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.8	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.0	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.2	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	97.3	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5266548)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	80.2	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.2	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.2	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.8	71.0	131

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5266548) - continued								
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.0	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.6	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	79.2	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.5	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5266528)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	93.4	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	104	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	81.6	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.3	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.8	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.8	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5266548)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	89.9	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	100	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.8	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	111	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.8	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	81.6	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5266528)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	91.0	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	110	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	93.8	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	87.5	54.8	124

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5266548)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	85.5	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	87.3	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	99.2	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	86.7	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5270217)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	129	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	121	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	93.6	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	72.3	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	96.6	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.9	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5270218)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	101	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	92.5	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	96.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	110	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	99.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	96.9	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5271074)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	95.1	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	108	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	96.7	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	103	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	92.7	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	101	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5276540)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	108	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	105	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	106	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	113	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	102	65.0	140

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5276540) - continued								
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	100	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5270217)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	105	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	106	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	126	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	122	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	122	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	78.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	78.2	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	82.4	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	100	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	98.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	84.6	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5270218)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	104	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	87.4	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	96.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	89.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	98.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	97.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	92.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	90.6	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	90.0	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	90.4	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5271074)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	92.8	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	91.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	93.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	96.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	112	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	92.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	99.2	69.0	133

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5271074) - continued								
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	103	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	110	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5276540)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	122	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	99.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	98.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	107	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	113	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	98.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	109	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	102	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	98.2	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	110	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5270217)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	92.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	68.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	96.7	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	130	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	114	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	101	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	65.4	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5270218)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	87.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.5	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	77.1	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	77.8	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	80.6	62.6	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5270218) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	86.2	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	75.8	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5271074)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	103	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	104	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	88.6	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	104	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	103	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	99.2	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	105	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5276540)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	99.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	117	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	89.4	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	95.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	95.8	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	96.2	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	97.6	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5270217)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	76.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	106	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	81.2	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	106	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5270218)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	98.2	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	86.8	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	108	67.0	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5270218) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	106	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5271074)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	90.9	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	108	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	129	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	133	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5276540)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	116	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	89.8	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	117	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	98.8	64.2	133
EP231P: PFAS Sums (QCLot: 5270217)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5270218)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5271074)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5276540)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5266528)							
ET2304234-011	0229_SD233_230821	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	97.3	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	109	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	125	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	100.0	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	80.4	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5266528)							
ET2304234-011	0229_SD233_230821	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	94.9	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	100.0	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	86.0	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	97.6	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	102	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	84.0	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	96.0	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	85.2	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	110	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	89.6	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	104	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5266528)							
ET2304234-011	0229_SD233_230821	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	95.6	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	84.9	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	99.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	97.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	93.1	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	96.8	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	95.2	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5266528)							
ET2304234-011	0229_SD233_230821	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	91.4	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	91.1	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	104	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	110	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5270217)							
ET2304234-002	0229_SW233_230821	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	124	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	123	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	122	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	69.4	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	110	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	98.1	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5270218)							
ET2304234-059	0229_MW233_230824	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	129	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	92.1	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	69.8	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	77.6	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	76.1	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	64.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5270217)							
ET2304234-002	0229_SW233_230821	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	114	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	107	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	119	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	126	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	115	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	77.6	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	76.4	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	76.3	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	104	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	96.2	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	90.4	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5270218)							
ET2304234-059	0229_MW233_230824	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	81.6	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	97.5	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	95.5	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	91.9	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	106	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	# 66.2	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	# 56.0	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	71.2	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	84.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	87.2	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	74.0	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5270217)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5270217) - continued							
ET2304234-002	0229_SW233_230821	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	90.0	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	71.6	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	103	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	121	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	127	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	99.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	64.5	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5270218)							
ET2304234-059	0229_MW233_230824	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	59.5	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	79.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	73.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	108	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	86.6	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	# 46.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5270217)							
ET2304234-002	0229_SW233_230821	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	75.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	105	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	104	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	# 144	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5270218)							
ET2304234-059	0229_MW233_230824	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	77.1	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	81.4	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	70.8	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	120	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ET2304234**	Page	: 1 of 20
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: MS [redacted]	Telephone	: [redacted]
Project	: QLD_0229_PFASOMP_23	Date Samples Received	: 29-Aug-2023
Site	: 0229_2023 Wet Season	Issue Date	: 13-Oct-2023
Sampler	: [redacted]	No. of samples received	: 106
Order number	: 60612487 task 3.1	No. of samples analysed	: 106

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	ET2304234--011	0229_SD233_230821	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231B: Perfluoroalkyl Carboxylic Acids	ET2304234--059	0229_MW233_230824	**Perfluorononanoic acid (PFNA)**	375-95-1	66.2 %	69.0-130%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	ET2304234--059	0229_MW233_230824	**Perfluorodecanoic acid (PFDA)**	335-76-2	56.0 %	71.0-129%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	ET2304234--059	0229_MW233_230824	**N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)**	2991-50-6	46.2 %	61.0-135%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	ET2304234--002	0229_SW233_230821	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	144 %	70.0-130%	**Recovery greater than upper data quality objective**

Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP231S: PFAS Surrogate	ET2304234-035	0229_QC103_230822	**13C8-PFOA**	----	78.0 %	78.1-131 %	**Recovery less than lower data quality objective**
EP231S: PFAS Surrogate	ET2304234-039	0229_SD110_230822	**13C8-PFOA**	----	65.0 %	78.1-131 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content (Dried @ 105-110°C)						
HDPE Soil Jar 0229_SD119_230822	----	----	----	07-Sep-2023	05-Sep-2023	**2**

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	1				

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	1				
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	33	3.03	5.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	5				
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	5	77	6.49	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	2	77	2.60	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055)							
0229_SD217_230821, 0229_SD233_230821, 0229_SD203_230821, 0229_SD205_230821, 0229_SD220_230821, 0229_SD242_230821, 0229_SD232_230821, 0229_QC101_230821, 0229_SD243_230821	**21-Aug-2023**	**----**	----	----	**30-Aug-2023**	04-Sep-2023	✓
HDPE Soil Jar (EA055)							
0229_SD245_230822, 0229_SD244_230822, 0229_SD227_230822, 0229_SD121_230822	**22-Aug-2023**	**----**	----	----	**30-Aug-2023**	05-Sep-2023	✓
HDPE Soil Jar (EA055)							
0229_SD119_230822	**22-Aug-2023**	**----**	----	----	**07-Sep-2023**	05-Sep-2023	×
HDPE Soil Jar (EA055)							
0229_SD120_230822, 0229_SD135_230822, 0229_SD113_230822, 0229_QC103_230822, 0229_SD109_230822, 0229_SD110_230822, 0229_SD144_230822, 0229_SD139_230822, 0229_SD140_230822, 0229_SD134_230822	**22-Aug-2023**	**----**	----	----	**30-Aug-2023**	05-Sep-2023	✓
HDPE Soil Jar (EA055)							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C) - Continued							
0229_SD126_230825, 0229_SD136_230825, 0229_SD133_230825, 0229_SD132_230825, 0229_QC108_230825, 0229_SD130_230825, 0229_SD129_230825, 0229_SD128_230825, 0229_QC109_230825	**25-Aug-2023**	**----**	----	**----**	**30-Aug-2023**	08-Sep-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0229_SD217_230821, 0229_SD233_230821, 0229_SD203_230821, 0229_SD205_230821, 0229_SD220_230821, 0229_SD242_230821, 0229_SD232_230821, 0229_QC101_230821, 0229_SD243_230821	**21-Aug-2023**	**30-Aug-2023**	17-Feb-2024	✓	**05-Sep-2023**	09-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD245_230822, 0229_SD244_230822, 0229_SD227_230822, 0229_SD121_230822, 0229_SD119_230822, 0229_SD120_230822, 0229_SD135_230822, 0229_SD113_230822, 0229_QC103_230822, 0229_SD109_230822, 0229_SD110_230822	**22-Aug-2023**	**30-Aug-2023**	18-Feb-2024	✓	**05-Sep-2023**	09-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD144_230822, 0229_SD139_230822, 0229_SD140_230822, 0229_SD134_230822	**22-Aug-2023**	**31-Aug-2023**	18-Feb-2024	✓	**07-Sep-2023**	10-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD126_230825, 0229_SD136_230825, 0229_SD133_230825, 0229_SD132_230825, 0229_QC108_230825, 0229_SD130_230825, 0229_SD129_230825, 0229_SD128_230825, 0229_QC109_230825	**25-Aug-2023**	**31-Aug-2023**	21-Feb-2024	✓	**07-Sep-2023**	10-Oct-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0229_SD217_230821, 0229_SD233_230821, 0229_SD203_230821, 0229_SD205_230821, 0229_SD220_230821, 0229_SD242_230821, 0229_SD232_230821, 0229_QC101_230821, 0229_SD243_230821	**21-Aug-2023**	**30-Aug-2023**	17-Feb-2024	✓	**05-Sep-2023**	09-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD245_230822, 0229_SD244_230822, 0229_SD227_230822, 0229_SD121_230822, 0229_SD119_230822, 0229_SD120_230822, 0229_SD135_230822, 0229_SD113_230822, 0229_QC103_230822, 0229_SD109_230822, 0229_SD110_230822	**22-Aug-2023**	**30-Aug-2023**	18-Feb-2024	✓	**05-Sep-2023**	09-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD144_230822, 0229_SD139_230822, 0229_SD140_230822, 0229_SD134_230822	**22-Aug-2023**	**31-Aug-2023**	18-Feb-2024	✓	**07-Sep-2023**	10-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD126_230825, 0229_SD136_230825, 0229_SD133_230825, 0229_SD132_230825, 0229_QC108_230825, 0229_SD130_230825, 0229_SD129_230825, 0229_SD128_230825, 0229_QC109_230825	**25-Aug-2023**	**31-Aug-2023**	21-Feb-2024	✓	**07-Sep-2023**	10-Oct-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0229_SD217_230821, 0229_SD233_230821, 0229_SD203_230821, 0229_SD205_230821, 0229_SD220_230821, 0229_SD242_230821, 0229_SD232_230821, 0229_QC101_230821, 0229_SD243_230821	**21-Aug-2023**	**30-Aug-2023**	17-Feb-2024	✓	**05-Sep-2023**	09-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD245_230822, 0229_SD244_230822, 0229_SD227_230822, 0229_SD121_230822, 0229_SD119_230822, 0229_SD120_230822, 0229_SD135_230822, 0229_SD113_230822, 0229_QC103_230822, 0229_SD109_230822, 0229_SD110_230822	**22-Aug-2023**	**30-Aug-2023**	18-Feb-2024	✓	**05-Sep-2023**	09-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD144_230822, 0229_SD139_230822, 0229_SD140_230822, 0229_SD134_230822	**22-Aug-2023**	**31-Aug-2023**	18-Feb-2024	✓	**07-Sep-2023**	10-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD126_230825, 0229_SD136_230825, 0229_SD133_230825, 0229_SD132_230825, 0229_QC108_230825, 0229_SD130_230825, 0229_SD129_230825, 0229_SD128_230825, 0229_QC109_230825	**25-Aug-2023**	**31-Aug-2023**	21-Feb-2024	✓	**07-Sep-2023**	10-Oct-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0229_SD217_230821, 0229_SD233_230821, 0229_SD203_230821, 0229_SD205_230821, 0229_SD220_230821, 0229_SD242_230821, 0229_SD232_230821, 0229_QC101_230821, 0229_SD243_230821	**21-Aug-2023**	**30-Aug-2023**	17-Feb-2024	✓	**05-Sep-2023**	09-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD245_230822, 0229_SD244_230822, 0229_SD227_230822, 0229_SD121_230822, 0229_SD119_230822, 0229_SD120_230822, 0229_SD135_230822, 0229_SD113_230822, 0229_QC103_230822, 0229_SD109_230822, 0229_SD110_230822	**22-Aug-2023**	**30-Aug-2023**	18-Feb-2024	✓	**05-Sep-2023**	09-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD144_230822, 0229_SD139_230822, 0229_SD140_230822, 0229_SD134_230822	**22-Aug-2023**	**31-Aug-2023**	18-Feb-2024	✓	**07-Sep-2023**	10-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD126_230825, 0229_SD136_230825, 0229_SD133_230825, 0229_SD132_230825, 0229_QC108_230825, 0229_SD130_230825, 0229_SD129_230825, 0229_SD128_230825, 0229_QC109_230825	**25-Aug-2023**	**31-Aug-2023**	21-Feb-2024	✓	**07-Sep-2023**	10-Oct-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0229_SD217_230821, 0229_SD233_230821, 0229_SD203_230821, 0229_SD205_230821, 0229_SD220_230821, 0229_SD242_230821, 0229_SD232_230821, 0229_QC101_230821, 0229_SD243_230821	**21-Aug-2023**	**30-Aug-2023**	17-Feb-2024	✓	**05-Sep-2023**	09-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD245_230822, 0229_SD244_230822, 0229_SD227_230822, 0229_SD121_230822, 0229_SD119_230822, 0229_SD120_230822, 0229_SD135_230822, 0229_SD113_230822, 0229_QC103_230822, 0229_SD109_230822, 0229_SD110_230822	**22-Aug-2023**	**30-Aug-2023**	18-Feb-2024	✓	**05-Sep-2023**	09-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD144_230822, 0229_SD139_230822, 0229_SD140_230822, 0229_SD134_230822	**22-Aug-2023**	**31-Aug-2023**	18-Feb-2024	✓	**07-Sep-2023**	10-Oct-2023	✓
HDPE Soil Jar (EP231X) 0229_SD126_230825, 0229_SD136_230825, 0229_SD133_230825, 0229_SD132_230825, 0229_QC108_230825, 0229_SD130_230825, 0229_SD129_230825, 0229_SD128_230825, 0229_QC109_230825	**25-Aug-2023**	**31-Aug-2023**	21-Feb-2024	✓	**07-Sep-2023**	10-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0229_SW217_230821, 0229_SW233_230821, 0229_SW203_230821, 0229_SW205_230821, 0229_SW220_230821, 0229_SW242_230821, 0229_SW232_230821, 0229_QC100_230821, 0229_SW243_230821, 0229_QC300_230821	**21-Aug-2023**	**05-Sep-2023**	17-Feb-2024	✓	**05-Sep-2023**	17-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW245_230822, 0229_SW244_230822, 0229_SW227_230822, 0229_SW119_230822, 0229_SW135_230822, 0229_SW113_230822, 0229_QC102_230822, 0229_SW109_230822, 0229_SW110_230822	**22-Aug-2023**	**05-Sep-2023**	18-Feb-2024	✓	**05-Sep-2023**	18-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW144_230822, 0229_SW139_230822, 0229_SW140_230822, 0229_SW134_230822, 0229_QC301_230822	**22-Aug-2023**	**05-Sep-2023**	18-Feb-2024	✓	**06-Sep-2023**	18-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW018_230823, 0229_QC302_230823	**23-Aug-2023**	**05-Sep-2023**	19-Feb-2024	✓	**06-Sep-2023**	19-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW003_230824, 0229_QC104_230824, 0229_QC105_230824, 0229_MW123I_230824, 0229_MW123S_230824, 0229_MW065_230824, 0229_MW122_230824, 0229_MW121_230824, 0229_MW120_230824, 0229_MW138_230824, 0229_MW101_230824, 0229_MW102_230824, 0229_QC106_230824, 0229_MW135_230824, 0229_MW114_230824, 0229_MW139_230824, 0229_MW105_230824	**24-Aug-2023**	**04-Sep-2023**	20-Feb-2024	✓	**06-Sep-2023**	20-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW002_230824, 0229_MW116_230824, 0229_MW232_230824, 0229_MW220S_230824, 0229_MW115_230824, 0229_MW205S_230824, 0229_MW236S_230824, 0229_MW235S_230824, 0229_MW125I_230824, 0229_MW125S_230824, 0229_MW233_230824, 0229_MW212_230824, 0229_MW124_230824, 0229_MW217_230824, 0229_MW128_230824, 0229_QC303_230824	**24-Aug-2023**	**05-Sep-2023**	20-Feb-2024	✓	**06-Sep-2023**	20-Feb-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids - Continued							
0229_SW132_230825, 0229_QC107_230825, 0229_SW128_230825, 0229_QC110_230825, 0229_MW106_230825, 0229_MW074_230825, 0229_MW072_230825, 0229_QC111_230825, 0229_MW131_230825, 0229_MW141_230825, 0229_MW118_230825, 0229_MW119_230825, 0229_QC304_230825	**25-Aug-2023**	**05-Sep-2023**	21-Feb-2024	✓	**06-Sep-2023**	21-Feb-2024	✓
HDPE (no PTFE) (EP231X)							
0229_QC500_230828	**28-Aug-2023**	**05-Sep-2023**	24-Feb-2024	✓	**06-Sep-2023**	24-Feb-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0229_SW217_230821, 0229_SW233_230821, 0229_SW203_230821, 0229_SW205_230821, 0229_SW220_230821, 0229_SW242_230821, 0229_SW232_230821, 0229_QC100_230821, 0229_SW243_230821, 0229_QC300_230821	**21-Aug-2023**	**05-Sep-2023**	17-Feb-2024	✓	**05-Sep-2023**	17-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW245_230822, 0229_SW244_230822, 0229_SW227_230822, 0229_SW119_230822, 0229_SW135_230822, 0229_SW113_230822, 0229_QC102_230822, 0229_SW109_230822, 0229_SW110_230822	**22-Aug-2023**	**05-Sep-2023**	18-Feb-2024	✓	**05-Sep-2023**	18-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW144_230822, 0229_SW139_230822, 0229_SW140_230822, 0229_SW134_230822, 0229_QC301_230822	**22-Aug-2023**	**05-Sep-2023**	18-Feb-2024	✓	**06-Sep-2023**	18-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW018_230823, 0229_QC302_230823	**23-Aug-2023**	**05-Sep-2023**	19-Feb-2024	✓	**06-Sep-2023**	19-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW003_230824, 0229_QC104_230824, 0229_QC105_230824, 0229_MW123I_230824, 0229_MW123S_230824, 0229_MW065_230824, 0229_MW122_230824, 0229_MW121_230824, 0229_MW120_230824, 0229_MW138_230824, 0229_MW101_230824, 0229_MW102_230824, 0229_QC106_230824, 0229_MW135_230824, 0229_MW114_230824, 0229_MW139_230824, 0229_MW105_230824	**24-Aug-2023**	**04-Sep-2023**	20-Feb-2024	✓	**06-Sep-2023**	20-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW002_230824, 0229_MW116_230824, 0229_MW232_230824, 0229_MW220S_230824, 0229_MW115_230824, 0229_MW205S_230824, 0229_MW236S_230824, 0229_MW235S_230824, 0229_MW125I_230824, 0229_MW125S_230824, 0229_MW233_230824, 0229_MW212_230824, 0229_MW124_230824, 0229_MW217_230824, 0229_MW128_230824, 0229_QC303_230824	**24-Aug-2023**	**05-Sep-2023**	20-Feb-2024	✓	**06-Sep-2023**	20-Feb-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids - Continued							
0229_SW132_230825, 0229_QC107_230825, 0229_SW128_230825, 0229_QC110_230825, 0229_MW106_230825, 0229_MW074_230825, 0229_MW072_230825, 0229_QC111_230825, 0229_MW131_230825, 0229_MW141_230825, 0229_MW118_230825, 0229_MW119_230825, 0229_QC304_230825	**25-Aug-2023**	**05-Sep-2023**	21-Feb-2024	✓	**06-Sep-2023**	21-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_QC500_230828	**28-Aug-2023**	**05-Sep-2023**	24-Feb-2024	✓	**06-Sep-2023**	24-Feb-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0229_SW217_230821, 0229_SW233_230821, 0229_SW203_230821, 0229_SW205_230821, 0229_SW220_230821, 0229_SW242_230821, 0229_SW232_230821, 0229_QC100_230821, 0229_SW243_230821, 0229_QC300_230821	**21-Aug-2023**	**05-Sep-2023**	17-Feb-2024	✓	**05-Sep-2023**	17-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW245_230822, 0229_SW244_230822, 0229_SW227_230822, 0229_SW119_230822, 0229_SW135_230822, 0229_SW113_230822, 0229_QC102_230822, 0229_SW109_230822, 0229_SW110_230822	**22-Aug-2023**	**05-Sep-2023**	18-Feb-2024	✓	**05-Sep-2023**	18-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW144_230822, 0229_SW139_230822, 0229_SW140_230822, 0229_SW134_230822, 0229_QC301_230822	**22-Aug-2023**	**05-Sep-2023**	18-Feb-2024	✓	**06-Sep-2023**	18-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW018_230823, 0229_QC302_230823	**23-Aug-2023**	**05-Sep-2023**	19-Feb-2024	✓	**06-Sep-2023**	19-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW003_230824, 0229_QC104_230824, 0229_QC105_230824, 0229_MW123I_230824, 0229_MW123S_230824, 0229_MW065_230824, 0229_MW122_230824, 0229_MW121_230824, 0229_MW120_230824, 0229_MW138_230824, 0229_MW101_230824, 0229_MW102_230824, 0229_QC106_230824, 0229_MW135_230824, 0229_MW114_230824, 0229_MW139_230824, 0229_MW105_230824	**24-Aug-2023**	**04-Sep-2023**	20-Feb-2024	✓	**06-Sep-2023**	20-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW002_230824, 0229_MW116_230824, 0229_MW232_230824, 0229_MW220S_230824, 0229_MW115_230824, 0229_MW205S_230824, 0229_MW236S_230824, 0229_MW235S_230824, 0229_MW125I_230824, 0229_MW125S_230824, 0229_MW233_230824, 0229_MW212_230824, 0229_MW124_230824, 0229_MW217_230824, 0229_MW128_230824, 0229_QC303_230824	**24-Aug-2023**	**05-Sep-2023**	20-Feb-2024	✓	**06-Sep-2023**	20-Feb-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides - Continued							
0229_SW132_230825, 0229_QC107_230825, 0229_SW128_230825, 0229_QC110_230825, 0229_MW106_230825, 0229_MW074_230825, 0229_MW072_230825, 0229_QC111_230825, 0229_MW131_230825, 0229_MW141_230825, 0229_MW118_230825, 0229_MW119_230825, 0229_QC304_230825	**25-Aug-2023**	**05-Sep-2023**	21-Feb-2024	✓	**06-Sep-2023**	21-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_QC500_230828	**28-Aug-2023**	**05-Sep-2023**	24-Feb-2024	✓	**06-Sep-2023**	24-Feb-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0229_SW217_230821, 0229_SW233_230821, 0229_SW203_230821, 0229_SW205_230821, 0229_SW220_230821, 0229_SW242_230821, 0229_SW232_230821, 0229_QC100_230821, 0229_SW243_230821, 0229_QC300_230821	**21-Aug-2023**	**05-Sep-2023**	17-Feb-2024	✓	**05-Sep-2023**	17-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW245_230822, 0229_SW244_230822, 0229_SW227_230822, 0229_SW119_230822, 0229_SW135_230822, 0229_SW113_230822, 0229_QC102_230822, 0229_SW109_230822, 0229_SW110_230822	**22-Aug-2023**	**05-Sep-2023**	18-Feb-2024	✓	**05-Sep-2023**	18-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW144_230822, 0229_SW139_230822, 0229_SW140_230822, 0229_SW134_230822, 0229_QC301_230822	**22-Aug-2023**	**05-Sep-2023**	18-Feb-2024	✓	**06-Sep-2023**	18-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW018_230823, 0229_QC302_230823	**23-Aug-2023**	**05-Sep-2023**	19-Feb-2024	✓	**06-Sep-2023**	19-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW003_230824, 0229_QC104_230824, 0229_QC105_230824, 0229_MW123I_230824, 0229_MW123S_230824, 0229_MW065_230824, 0229_MW122_230824, 0229_MW121_230824, 0229_MW120_230824, 0229_MW138_230824, 0229_MW101_230824, 0229_MW102_230824, 0229_QC106_230824, 0229_MW135_230824, 0229_MW114_230824, 0229_MW139_230824, 0229_MW105_230824	**24-Aug-2023**	**04-Sep-2023**	20-Feb-2024	✓	**06-Sep-2023**	20-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW002_230824, 0229_MW116_230824, 0229_MW232_230824, 0229_MW220S_230824, 0229_MW115_230824, 0229_MW205S_230824, 0229_MW236S_230824, 0229_MW235S_230824, 0229_MW125I_230824, 0229_MW125S_230824, 0229_MW233_230824, 0229_MW212_230824, 0229_MW124_230824, 0229_MW217_230824, 0229_MW128_230824, 0229_QC303_230824	**24-Aug-2023**	**05-Sep-2023**	20-Feb-2024	✓	**06-Sep-2023**	20-Feb-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued							
0229_SW132_230825, 0229_QC107_230825, 0229_SW128_230825, 0229_QC110_230825, 0229_MW106_230825, 0229_MW074_230825, 0229_MW072_230825, 0229_QC111_230825, 0229_MW131_230825, 0229_MW141_230825, 0229_MW118_230825, 0229_MW119_230825, 0229_QC304_230825	**25-Aug-2023**	**05-Sep-2023**	21-Feb-2024	✓	**06-Sep-2023**	21-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_QC500_230828	**28-Aug-2023**	**05-Sep-2023**	24-Feb-2024	✓	**06-Sep-2023**	24-Feb-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0229_SW217_230821, 0229_SW233_230821, 0229_SW203_230821, 0229_SW205_230821, 0229_SW220_230821, 0229_SW242_230821, 0229_SW232_230821, 0229_QC100_230821, 0229_SW243_230821, 0229_QC300_230821	**21-Aug-2023**	**05-Sep-2023**	17-Feb-2024	✓	**05-Sep-2023**	17-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW245_230822, 0229_SW244_230822, 0229_SW227_230822, 0229_SW119_230822, 0229_SW135_230822, 0229_SW113_230822, 0229_QC102_230822, 0229_SW109_230822, 0229_SW110_230822	**22-Aug-2023**	**05-Sep-2023**	18-Feb-2024	✓	**05-Sep-2023**	18-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW144_230822, 0229_SW139_230822, 0229_SW140_230822, 0229_SW134_230822, 0229_QC301_230822	**22-Aug-2023**	**05-Sep-2023**	18-Feb-2024	✓	**06-Sep-2023**	18-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW018_230823, 0229_QC302_230823	**23-Aug-2023**	**05-Sep-2023**	19-Feb-2024	✓	**06-Sep-2023**	19-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW003_230824, 0229_QC104_230824, 0229_QC105_230824, 0229_MW123I_230824, 0229_MW123S_230824, 0229_MW065_230824, 0229_MW122_230824, 0229_MW121_230824, 0229_MW120_230824, 0229_MW138_230824, 0229_MW101_230824, 0229_MW102_230824, 0229_QC106_230824, 0229_MW135_230824, 0229_MW114_230824, 0229_MW139_230824, 0229_MW105_230824	**24-Aug-2023**	**04-Sep-2023**	20-Feb-2024	✓	**06-Sep-2023**	20-Feb-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW002_230824, 0229_MW116_230824, 0229_MW232_230824, 0229_MW220S_230824, 0229_MW115_230824, 0229_MW205S_230824, 0229_MW236S_230824, 0229_MW235S_230824, 0229_MW125I_230824, 0229_MW125S_230824, 0229_MW233_230824, 0229_MW212_230824, 0229_MW124_230824, 0229_MW217_230824, 0229_MW128_230824, 0229_QC303_230824	**24-Aug-2023**	**05-Sep-2023**	20-Feb-2024	✓	**06-Sep-2023**	20-Feb-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums - Continued							
0229_SW132_230825, 0229_SW128_230825, 0229_MW106_230825, 0229_MW072_230825, 0229_MW131_230825, 0229_MW118_230825, 0229_QC304_230825, 0229_QC107_230825, 0229_QC110_230825, 0229_MW074_230825, 0229_QC111_230825, 0229_MW141_230825, 0229_MW119_230825,	**25-Aug-2023**	**05-Sep-2023**	21-Feb-2024	✓	**06-Sep-2023**	21-Feb-2024	✓
HDPE (no PTFE) (EP231X)							
0229_QC500_230828	**28-Aug-2023**	**05-Sep-2023**	24-Feb-2024	✓	**06-Sep-2023**	24-Feb-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	5	33	**15.15**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	33	**12.12**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	33	**6.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	33	**6.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	33	**3.03**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	5	77	**6.49**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	77	**5.19**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	77	**5.19**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	77	**2.60**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **ET2304234**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: MS [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	:
Project	: QLD_0229_PFASOMP_23	Page	: 1 of 5
Order number	: 60612487 task 3.1	Quote number	: ET2021AECOMAU0001 (TV/007/21 v2 - Compass)
C-O-C number	: 56239	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: 0229_2023 Wet Season		
Sampler	: [redacted]		

Dates

Date Samples Received	: 29-Aug-2023 08:00	Issue Date	: 30-Aug-2023
Client Requested Due Date	: 06-Sep-2023	Scheduled Reporting Date	: **06-Sep-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 4	Temperature	: 0.3, 2.8, 4.7, 2.9°C - Ice present
Receipt Detail	: SMALL ESKY	No. of samples received / analysed	: 106 / 106

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***Samples were originally received by ALS Townsville on 28/08/23, and forwarded to ALS Brisbane for analysis.**
- **29/08/23: SRN has been resent to acknowledge that additional samples were not received by ALS, and remaining samples have been allocated to their matching AECOM Chain Of Custody. For any further information regarding these adjustments please contact client services at [redacted].**
- ***30/08/2023*: SRN has been resent to acknowledge addition of report recipients and update to sample date and times for ET2304234-104 & -105 as per [redacted]. For any further information regarding these adjustments please contact client services at [redacted].**
- **All analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
ET2304234-010	21-Aug-2023 15:45	0229_SD217_230821	✓	✓
ET2304234-011	21-Aug-2023 15:46	0229_SD233_230821	✓	✓
ET2304234-012	21-Aug-2023 15:47	0229_SD203_230821	✓	✓
ET2304234-013	21-Aug-2023 15:48	0229_SD205_230821	✓	✓
ET2304234-014	21-Aug-2023 15:49	0229_SD220_230821	✓	✓
ET2304234-015	21-Aug-2023 15:50	0229_SD242_230821	✓	✓
ET2304234-016	21-Aug-2023 15:51	0229_SD232_230821	✓	✓
ET2304234-017	21-Aug-2023 15:52	0229_QC101_230821	✓	✓
ET2304234-018	21-Aug-2023 15:53	0229_SD243_230821	✓	✓
ET2304234-020	22-Aug-2023 09:55	0229_SD245_230822	✓	✓
ET2304234-022	22-Aug-2023 10:10	0229_SD244_230822	✓	✓
ET2304234-024	22-Aug-2023 11:19	0229_SD227_230822	✓	✓
ET2304234-026	22-Aug-2023 13:45	0229_SD121_230822	✓	✓
ET2304234-028	22-Aug-2023 13:53	0229_SD119_230822	✓	✓
ET2304234-029	22-Aug-2023 14:05	0229_SD120_230822	✓	✓
ET2304234-031	22-Aug-2023 14:16	0229_SD135_230822	✓	✓
ET2304234-034	22-Aug-2023 14:46	0229_SD113_230822	✓	✓
ET2304234-035	22-Aug-2023 14:47	0229_QC103_230822	✓	✓
ET2304234-037	22-Aug-2023 15:08	0229_SD109_230822	✓	✓
ET2304234-039	22-Aug-2023 15:19	0229_SD110_230822	✓	✓
ET2304234-041	22-Aug-2023 15:34	0229_SD144_230822	✓	✓
ET2304234-043	22-Aug-2023 15:57	0229_SD139_230822	✓	✓
ET2304234-045	22-Aug-2023 16:17	0229_SD140_230822	✓	✓
ET2304234-047	22-Aug-2023 16:33	0229_SD134_230822	✓	✓
ET2304234-076	25-Aug-2023 09:32	0229_SD126_230825	✓	✓
ET2304234-083	25-Aug-2023 09:52	0229_SD136_230825	✓	✓
ET2304234-084	25-Aug-2023 10:03	0229_SD133_230825	✓	✓
ET2304234-085	25-Aug-2023 10:17	0229_SD132_230825	✓	✓
ET2304234-086	25-Aug-2023 10:18	0229_QC108_230825	✓	✓
ET2304234-089	25-Aug-2023 10:41	0229_SD130_230825	✓	✓
ET2304234-090	25-Aug-2023 10:50	0229_SD129_230825	✓	✓
ET2304234-091	25-Aug-2023 11:00	0229_SD128_230825	✓	✓
ET2304234-092	25-Aug-2023 11:01	0229_QC109_230825	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
ET2304234-001	21-Aug-2023 13:07	0229_SW217_230821	✓
ET2304234-002	21-Aug-2023 13:33	0229_SW233_230821	✓
ET2304234-003	21-Aug-2023 13:50	0229_SW203_230821	✓
ET2304234-004	21-Aug-2023 14:45	0229_SW205_230821	✓
ET2304234-005	21-Aug-2023 14:47	0229_SW220_230821	✓
ET2304234-006	21-Aug-2023 15:08	0229_SW242_230821	✓
ET2304234-007	21-Aug-2023 15:25	0229_SW232_230821	✓
ET2304234-008	21-Aug-2023 15:26	0229_QC100_230821	✓
ET2304234-009	21-Aug-2023 15:43	0229_SW243_230821	✓
ET2304234-019	21-Aug-2023 16:56	0229_QC300_230821	✓
ET2304234-021	22-Aug-2023 09:57	0229_SW245_230822	✓
ET2304234-023	22-Aug-2023 10:11	0229_SW244_230822	✓
ET2304234-025	22-Aug-2023 11:20	0229_SW227_230822	✓
ET2304234-027	22-Aug-2023 13:52	0229_SW119_230822	✓
ET2304234-030	22-Aug-2023 14:15	0229_SW135_230822	✓
ET2304234-032	22-Aug-2023 14:44	0229_SW113_230822	✓
ET2304234-033	22-Aug-2023 14:45	0229_QC102_230822	✓
ET2304234-036	22-Aug-2023 15:07	0229_SW109_230822	✓
ET2304234-038	22-Aug-2023 15:18	0229_SW110_230822	✓
ET2304234-040	22-Aug-2023 15:33	0229_SW144_230822	✓
ET2304234-042	22-Aug-2023 15:56	0229_SW139_230822	✓
ET2304234-044	22-Aug-2023 16:16	0229_SW140_230822	✓
ET2304234-046	22-Aug-2023 16:32	0229_SW134_230822	✓
ET2304234-048	22-Aug-2023 16:50	0229_QC301_230822	✓
ET2304234-049	24-Aug-2023 09:18	0229_MW002_230824	✓
ET2304234-050	24-Aug-2023 09:35	0229_MW116_230824	✓
ET2304234-051	24-Aug-2023 09:43	0229_MW232_230824	✓
ET2304234-052	24-Aug-2023 09:43	0229_MW220S_230824	✓
ET2304234-053	24-Aug-2023 09:52	0229_MW115_230824	✓
ET2304234-054	24-Aug-2023 10:03	0229_MW205S_230824	✓
ET2304234-055	24-Aug-2023 10:39	0229_MW236S_230824	✓
ET2304234-056	24-Aug-2023 10:40	0229_MW235S_230824	✓
ET2304234-057	24-Aug-2023 10:13	0229_MW125I_230824	✓
ET2304234-058	24-Aug-2023 10:35	0229_MW125S_230824	✓
ET2304234-059	24-Aug-2023 10:54	0229_MW233_230824	✓
ET2304234-060	24-Aug-2023 11:20	0229_MW212_230824	✓
ET2304234-061	24-Aug-2023 11:02	0229_MW124_230824	✓
ET2304234-062	24-Aug-2023 11:37	0229_MW217_230824	✓
ET2304234-063	24-Aug-2023 11:33	0229_MW003_230824	✓
ET2304234-064	24-Aug-2023 11:34	0229_QC104_230824	✓
ET2304234-065	24-Aug-2023 11:38	0229_QC105_230824	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
ET2304234-066	24-Aug-2023 11:46	0229_MW123I_230824	✓
ET2304234-067	24-Aug-2023 12:02	0229_MW123S_230824	✓
ET2304234-068	24-Aug-2023 12:25	0229_MW065_230824	✓
ET2304234-069	24-Aug-2023 13:56	0229_MW122_230824	✓
ET2304234-070	24-Aug-2023 14:04	0229_MW121_230824	✓
ET2304234-071	24-Aug-2023 15:07	0229_MW120_230824	✓
ET2304234-072	24-Aug-2023 14:18	0229_MW138_230824	✓
ET2304234-073	24-Aug-2023 14:33	0229_MW101_230824	✓
ET2304234-074	24-Aug-2023 14:42	0229_MW102_230824	✓
ET2304234-075	24-Aug-2023 15:08	0229_QC106_230824	✓
ET2304234-077	24-Aug-2023 15:16	0229_MW135_230824	✓
ET2304234-078	24-Aug-2023 15:25	0229_MW114_230824	✓
ET2304234-079	24-Aug-2023 15:34	0229_MW139_230824	✓
ET2304234-080	24-Aug-2023 15:50	0229_MW105_230824	✓
ET2304234-081	24-Aug-2023 15:58	0229_MW128_230824	✓
ET2304234-082	24-Aug-2023 16:00	0229_QC303_230824	✓
ET2304234-087	25-Aug-2023 10:18	0229_SW132_230825	✓
ET2304234-088	25-Aug-2023 10:19	0229_QC107_230825	✓
ET2304234-093	25-Aug-2023 11:41	0229_SW128_230825	✓
ET2304234-094	25-Aug-2023 11:42	0229_QC110_230825	✓
ET2304234-095	25-Aug-2023 12:05	0229_MW106_230825	✓
ET2304234-096	25-Aug-2023 12:12	0229_MW074_230825	✓
ET2304234-097	25-Aug-2023 12:23	0229_MW072_230825	✓
ET2304234-098	25-Aug-2023 12:23	0229_QC111_230825	✓
ET2304234-099	25-Aug-2023 12:28	0229_MW131_230825	✓
ET2304234-100	25-Aug-2023 12:39	0229_MW141_230825	✓
ET2304234-101	25-Aug-2023 13:06	0229_MW118_230825	✓
ET2304234-102	25-Aug-2023 13:13	0229_MW119_230825	✓
ET2304234-103	25-Aug-2023 13:19	0229_QC304_230825	✓
ET2304234-104	23-Aug-2023 11:33	0229_MW018_230823	✓
ET2304234-105	23-Aug-2023 18:00	0229_QC302_230823	✓
ET2304234-106	28-Aug-2023 12:23	0229_QC500_230828	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(SOIL) EP231C: Perfluoroalkyl Sulfonamides
(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids
(SOIL) EP231P: PFAS Sums
(SOIL) EP231S: PFAS Surrogate
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

eurofins

web: www.eurofins.com.au
email: [redacted]

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

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Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

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35 O'Rorke Road	43 Detroit Drive	1277 Cameron Road,
Penrose,	Rolleston,	Gate Pa,
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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: AECOM Aust Pty Ltd Brisbane
Address: Level 8, 540 Wickham Street
Fortitude Valley
QLD 4006

Project Name: 60612487_3.1
Project ID: QLD_0229_PFASOMP_23

Order No.:
Report #: 1021562
Phone: [redacted]
Fax: [redacted]

Received: Aug 29, 2023 9:25 AM
Due: Sep 5, 2023
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	0229_QC200_230821	Aug 21, 2023		Water	B23-Au0077491		X
2	0229_QC201_230821	Aug 21, 2023		Soil	B23-Au0077492	X	X
3	0229_QC202_230822	Aug 22, 2023		Water	B23-Au0077493		X
4	0229_QC203_230822	Aug 22, 2023		Soil	B23-Au0077494	X	X
5	0229_QC204_230824	Aug 24, 2023		Water	B23-Au0077495		X
6	0229_QC205_230824	Aug 24, 2023		Water	B23-Au0077496		X
7	0229_QC206_230824	Aug 24, 2023		Water	B23-Au0077497		X
8	0229_QC207_230825	Aug 25, 2023		Water	B23-Au0077498		X

eurofins

web: www.eurofins.com.au
email: [redacted]

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
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Tel: +61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

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35 O'Rorke Road	43 Detroit Drive	1277 Cameron Road,
Penrose,	Rolleston,	Gate Pa,
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Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: AECOM Aust Pty Ltd Brisbane
Address: Level 8, 540 Wickham Street
Fortitude Valley
QLD 4006

Project Name: 60612487_3.1
Project ID: QLD_0229_PFASOMP_23

Order No.:
Report #: 1021562
Phone: [redacted]
Fax: [redacted]

Received: Aug 29, 2023 9:25 AM
Due: Sep 5, 2023
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
9	0229_QC208_230825	Aug 25, 2023		Soil	B23-Au0077499	X	X
10	0229_QC209_230825	Aug 25, 2023		Soil	B23-Au0077500	X	X
11	0229_QC210_230825	Aug 25, 2023		Water	B23-Au0077501		X
12	0229_QC211_230825	Aug 25, 2023		Water	B23-Au0077502		X
13	0229_QC501_230828	Aug 28, 2023		Water	B23-Au0077503		X
Test Counts						4	13

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley
QLD 4006

NATA Accredited
Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **1021562-W**
Project name 60612487_3.1
Project ID QLD_0229_PFASOMP_23
Received Date Aug 29, 2023

Client Sample ID			**0229_QC200_230821**	**0229_QC202_230822**	**0229_QC204_230824**	**0229_QC205_230824**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**B23-Au0077491**	**B23-Au0077493**	**B23-Au0077495**	**B23-Au0077496**
Date Sampled			**Aug 21, 2023**	**Aug 22, 2023**	**Aug 24, 2023**	**Aug 24, 2023**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.01	0.08	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	[N09]0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	79	63	102	56
13C5-PFPeA (surr.)	1	%	75	53	88	122
13C5-PFHxA (surr.)	1	%	81	53	99	66
13C4-PFHpA (surr.)	1	%	106	71	106	69
13C8-PFOA (surr.)	1	%	112	65	111	77
13C5-PFNA (surr.)	1	%	104	62	112	77
13C6-PFDA (surr.)	1	%	80	43	84	58
13C2-PFUnDA (surr.)	1	%	77	43	86	56
13C2-PFDoDA (surr.)	1	%	56	38	74	61
13C2-PFTeDA (surr.)	1	%	57	27	46	112
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	92	47	118	81
D3-N-MeFOSA (surr.)	1	%	125	64	109	77

Client Sample ID			0229_QC200_230821	0229_QC202_230822	0229_QC204_230824	0229_QC205_230824
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B23-Au0077491	B23-Au0077493	B23-Au0077495	B23-Au0077496
Date Sampled			Aug 21, 2023	Aug 22, 2023	Aug 24, 2023	Aug 24, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	117	49	110	78
D7-N-MeFOSE (surr.)	1	%	45	23	78	56
D9-N-EtFOSE (surr.)	1	%	62	36	86	66
D5-N-EtFOSAA (surr.)	1	%	64	34	89	63
D3-N-MeFOSAA (surr.)	1	%	65	40	80	55
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.01	0.08	< 0.01	0.02
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	0.04	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	0.02	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.05	[N09]0.31	< 0.01	[N09]0.02
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.02	[N09]0.12	< 0.01	[N09]0.02
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	87	50	93	69
18O2-PFHxS (surr.)	1	%	104	56	110	85
13C8-PFOS (surr.)	1	%	125	77	141	139
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.12	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	81	62	89	59
13C2-6:2 FTSA (surr.)	1	%	97	64	101	121
13C2-8:2 FTSA (surr.)	1	%	39	40	62	86
13C2-10:2 FTSA (surr.)	1	%	50	52	92	78
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.07	0.43	< 0.01	0.04
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.02	0.13	< 0.01	0.02
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.07	0.44	< 0.01	0.04
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.09	0.66	0.12	0.06
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	0.72	0.12	< 0.1

Client Sample ID			0229_QC206_230824	0229_QC207_230825	0229_QC210_230825	0229_QC211_230825
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B23-Au0077497	B23-Au0077498	B23-Au0077501	B23-Au0077502
Date Sampled			Aug 24, 2023	Aug 25, 2023	Aug 25, 2023	Aug 25, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	0.12	< 0.05	0.74
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	0.06	< 0.01	1.1
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	0.39	< 0.01	6.6
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	0.06	< 0.01	0.93
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	[N09]0.15	< 0.01	1.7
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	1.8
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	57	71	68	72
13C5-PFPeA (surr.)	1	%	46	57	54	90
13C5-PFHxA (surr.)	1	%	80	78	82	113
13C4-PFHpA (surr.)	1	%	82	78	95	58
13C8-PFOA (surr.)	1	%	93	87	97	111
13C5-PFNA (surr.)	1	%	105	104	107	55
13C6-PFDA (surr.)	1	%	72	68	93	78
13C2-PFUnDA (surr.)	1	%	66	82	83	75
13C2-PFDoDA (surr.)	1	%	87	59	67	58
13C2-PFTeDA (surr.)	1	%	41	55	90	54
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	120	84	101	93
D3-N-MeFOSA (surr.)	1	%	81	120	74	81
D5-N-EtFOSA (surr.)	1	%	80	104	76	89
D7-N-MeFOSE (surr.)	1	%	80	60	49	56
D9-N-EtFOSE (surr.)	1	%	95	57	68	64
D5-N-EtFOSAA (surr.)	1	%	102	63	71	63
D3-N-MeFOSAA (surr.)	1	%	90	63	64	56
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.03	0.25	0.01	4.6
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.1
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	0.10	< 0.01	2.2
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	0.18	< 0.01	4.2
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.05	[N09]2.3	[N09]0.02	[N09]40
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	[N09]0.15	< 0.01	[N09]1.3
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.08	[N09]2.0	[N09]0.03	[N09]46
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.1

Client Sample ID			0229_QC206_230824	0229_QC207_230825	0229_QC210_230825	0229_QC211_230825
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B23-Au0077497	B23-Au0077498	B23-Au0077501	B23-Au0077502
Date Sampled			Aug 24, 2023	Aug 25, 2023	Aug 25, 2023	Aug 25, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
13C3-PFBS (surr.)	1	%	100	77	81	26
18O2-PFHxS (surr.)	1	%	123	60	111	105
13C8-PFOS (surr.)	1	%	129	88	147	126
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	72	91	89	95
13C2-6:2 FTSA (surr.)	1	%	155	133	INT	102
13C2-8:2 FTSA (surr.)	1	%	117	81	127	61
13C2-10:2 FTSA (surr.)	1	%	140	83	119	76
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.13	4.3	0.05	86
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.08	2.15	0.03	47.7
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.13	4.45	0.05	87.7
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.16	5.33	0.06	101.72
Sum of PFASs (n=30)*	0.1	ug/L	0.16	5.76	< 0.1	111.22

Client Sample ID			0229_QC501_230828
Sample Matrix			Water
Eurofins Sample No.			B23-Au0077503
Date Sampled			Aug 28, 2023
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	121
13C5-PFPeA (surr.)	1	%	101
13C5-PFHxA (surr.)	1	%	120
13C4-PFHpA (surr.)	1	%	138
13C8-PFOA (surr.)	1	%	136
13C5-PFNA (surr.)	1	%	132
13C6-PFDA (surr.)	1	%	120

Client Sample ID			0229_QC501_230828
Sample Matrix			Water
Eurofins Sample No.			B23-Au0077503
Date Sampled			Aug 28, 2023
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
13C2-PFUnDA (surr.)	1	%	112
13C2-PFDoDA (surr.)	1	%	88
13C2-PFTeDA (surr.)	1	%	60
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	78
D3-N-MeFOSA (surr.)	1	%	127
D5-N-EtFOSA (surr.)	1	%	99
D7-N-MeFOSE (surr.)	1	%	57
D9-N-EtFOSE (surr.)	1	%	73
D5-N-EtFOSAA (surr.)	1	%	77
D3-N-MeFOSAA (surr.)	1	%	86
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	105
18O2-PFHxS (surr.)	1	%	122
13C8-PFOS (surr.)	1	%	134
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	128
13C2-6:2 FTSA (surr.)	1	%	106
13C2-8:2 FTSA (surr.)	1	%	70
13C2-10:2 FTSA (surr.)	1	%	78

Client Sample ID			0229_QC501_230828
Sample Matrix			**Water**
Eurofins Sample No.			**B23-Au0077503**
Date Sampled			**Aug 28, 2023**
Test/Reference	LOR	Unit	
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Sep 01, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Sep 01, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Sep 01, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Sep 01, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Company Name: AECOM Aust Pty Ltd Brisbane
Address: Level 8, 540 Wickham Street
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QLD 4006

Project Name: 60612487_3.1
Project ID: QLD_0229_PFASOMP_23

Order No.:
Report #: 1021562
Phone: [redacted]
Fax: [redacted]

Received: Aug 29, 2023 9:25 AM
Due: Sep 5, 2023
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	0229_QC200_230821	Aug 21, 2023		Water	B23-Au0077491		X
2	0229_QC201_230821	Aug 21, 2023		Soil	B23-Au0077492	X	X
3	0229_QC202_230822	Aug 22, 2023		Water	B23-Au0077493		X
4	0229_QC203_230822	Aug 22, 2023		Soil	B23-Au0077494	X	X
5	0229_QC204_230824	Aug 24, 2023		Water	B23-Au0077495		X
6	0229_QC205_230824	Aug 24, 2023		Water	B23-Au0077496		X
7	0229_QC206_230824	Aug 24, 2023		Water	B23-Au0077497		X
8	0229_QC207_230825	Aug 25, 2023		Water	B23-Au0077498		X

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Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: AECOM Aust Pty Ltd Brisbane
Address: Level 8, 540 Wickham Street
Fortitude Valley
QLD 4006

Project Name: 60612487_3.1
Project ID: QLD_0229_PFASOMP_23

Order No.:
Report #: 1021562
Phone: [redacted]
Fax: [redacted]

Received: Aug 29, 2023 9:25 AM
Due: Sep 5, 2023
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
9	0229_QC208_230825	Aug 25, 2023		Soil	B23-Au0077499	X	X
10	0229_QC209_230825	Aug 25, 2023		Soil	B23-Au0077500	X	X
11	0229_QC210_230825	Aug 25, 2023		Water	B23-Au0077501		X
12	0229_QC211_230825	Aug 25, 2023		Water	B23-Au0077502		X
13	0229_QC501_230828	Aug 28, 2023		Water	B23-Au0077503		X
Test Counts						4	13

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	102			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	84			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	100			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	94			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	101			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	123			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	98			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	86			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	84			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	108			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	127			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	76			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	110			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	57			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	88			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	99			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	74			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	66			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	81			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	118			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	112			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	79			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	95			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	80			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	82			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	87			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	84			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	84			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	62			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B23-Au0077502	CP	%	137			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B23-Au0077502	CP	%	55			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B23-Au0077502	CP	%	61			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B23-Au0077502	CP	%	116			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B23-Au0077502	CP	%	89			50-150	Pass	
Perfluorononanoic acid (PFNA)	B23-Au0077502	CP	%	104			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B23-Au0077502	CP	%	110			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B23-Au0077502	CP	%	101			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B23-Au0077502	CP	%	94			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B23-Au0077502	CP	%	139			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B23-Au0077502	CP	%	125			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B23-Au0077502	CP	%	74			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B23-Au0077502	CP	%	129			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B23-Au0077502	CP	%	73			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B23-Au0077502	CP	%	111			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B23-Au0077502	CP	%	107			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B23-Au0077502	CP	%	97			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B23-Au0077502	CP	%	92			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B23-Au0077502	CP	%	135			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B23-Au0077502	CP	%	53			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B23-Au0077502	CP	%	74			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B23-Au0077502	CP	%	119			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B23-Au0077502	CP	%	77			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B23-Au0077502	CP	%	77			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B23-Au0077502	CP	%	103			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B23-Au0077502	CP	%	58			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B23-Au0077502	CP	%	119			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B23-Au0077502	CP	%	88			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B23-Au0077502	CP	%	95			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B23-Au0077502	CP	%	69			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B23-Au0077501	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B23-Au0077501	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B23-Au0077501	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B23-Au0077501	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B23-Au0077501	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B23-Au0077501	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B23-Au0077501	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B23-Au0077501	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B23-Au0077501	CP	ug/L	0.01	0.01	11	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B23-Au0077501	CP	ug/L	0.02	0.02	9.8	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B23-Au0077501	CP	ug/L	0.03	0.03	3.2	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B23-Au0077501	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B23-Au0077501	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager

[redacted] Senior Analyst-PFAS

[redacted]

Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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QLD 4006

NATA Accredited
Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
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Attention: [redacted]

Report **1021562-S**
Project name 60612487_3.1
Project ID QLD_0229_PFASOMP_23
Received Date Aug 29, 2023

Client Sample ID			**0229_QC201_230821**	**0229_QC203_230822**	**0229_QC208_230825**	**0229_QC209_230825**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**B23-Au0077492**	**B23-Au0077494**	**B23-Au0077499**	**B23-Au0077500**
Date Sampled			**Aug 21, 2023**	**Aug 22, 2023**	**Aug 25, 2023**	**Aug 25, 2023**
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	43	31	20	31
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	45	72	75	74
13C5-PFPeA (surr.)	1	%	53	93	92	97
13C5-PFHxA (surr.)	1	%	48	74	75	75
13C4-PFHpA (surr.)	1	%	58	71	82	76
13C8-PFOA (surr.)	1	%	63	81	88	87
13C5-PFNA (surr.)	1	%	52	75	73	72
13C6-PFDA (surr.)	1	%	59	77	81	82
13C2-PFUnDA (surr.)	1	%	83	100	103	96
13C2-PFDoDA (surr.)	1	%	85	98	99	108
13C2-PFTeDA (surr.)	1	%	110	119	119	106
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10

Client Sample ID			0229_QC201_230821	0229_QC203_230822	0229_QC208_230825	0229_QC209_230825
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B23-Au0077492	B23-Au0077494	B23-Au0077499	B23-Au0077500
Date Sampled			Aug 21, 2023	Aug 22, 2023	Aug 25, 2023	Aug 25, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
13C8-FOSA (surr.)	1	%	82	107	127	101
D3-N-MeFOSA (surr.)	1	%	101	104	96	80
D5-N-EtFOSA (surr.)	1	%	71	86	85	63
D7-N-MeFOSE (surr.)	1	%	64	58	132	77
D9-N-EtFOSE (surr.)	1	%	70	86	104	70
D5-N-EtFOSAA (surr.)	1	%	69	79	91	76
D3-N-MeFOSAA (surr.)	1	%	111	137	142	126
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	70	96	102	94
18O2-PFHxS (surr.)	1	%	70	100	106	106
13C8-PFOS (surr.)	1	%	103	139	131	143
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	27	82	50	78
13C2-6:2 FTSA (surr.)	1	%	41	47	38	68
13C2-8:2 FTSA (surr.)	1	%	51	98	66	61
13C2-10:2 FTSA (surr.)	1	%	90	144	139	138
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Brisbane	Aug 30, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Sep 01, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Sep 01, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Sep 01, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Sep 01, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Company Name: AECOM Aust Pty Ltd Brisbane
Address: Level 8, 540 Wickham Street
Fortitude Valley
QLD 4006

Project Name: 60612487_3.1
Project ID: QLD_0229_PFASOMP_23

Order No.:
Report #: 1021562
Phone: [redacted]
Fax: [redacted]

Received: Aug 29, 2023 9:25 AM
Due: Sep 5, 2023
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	0229_QC200_230821	Aug 21, 2023		Water	B23-Au0077491		X
2	0229_QC201_230821	Aug 21, 2023		Soil	B23-Au0077492	X	X
3	0229_QC202_230822	Aug 22, 2023		Water	B23-Au0077493		X
4	0229_QC203_230822	Aug 22, 2023		Soil	B23-Au0077494	X	X
5	0229_QC204_230824	Aug 24, 2023		Water	B23-Au0077495		X
6	0229_QC205_230824	Aug 24, 2023		Water	B23-Au0077496		X
7	0229_QC206_230824	Aug 24, 2023		Water	B23-Au0077497		X
8	0229_QC207_230825	Aug 25, 2023		Water	B23-Au0077498		X

eurofins

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

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Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
9	0229_QC208_230825	Aug 25, 2023		Soil	B23-Au0077499	X	X
10	0229_QC209_230825	Aug 25, 2023		Soil	B23-Au0077500	X	X
11	0229_QC210_230825	Aug 25, 2023		Water	B23-Au0077501		X
12	0229_QC211_230825	Aug 25, 2023		Water	B23-Au0077502		X
13	0229_QC501_230828	Aug 28, 2023		Water	B23-Au0077503		X
Test Counts						4	13

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	124			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	104			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	102			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	103			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	113			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	103			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	94			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	103			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	115			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	113			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	112			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	69			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	147			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	122			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	72			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	97			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	123			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	111			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	93			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	127			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	136			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	105			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	103			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	94			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	109			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	100			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	55			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	142			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	91			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B23-Au0073115	NCP	%	100			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B23-Au0073115	NCP	%	90			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B23-Au0073115	NCP	%	90			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B23-Au0073115	NCP	%	91			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B23-Au0073115	NCP	%	87			50-150	Pass	
Perfluorononanoic acid (PFNA)	B23-Au0073115	NCP	%	86			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B23-Au0073115	NCP	%	69			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B23-Au0073115	NCP	%	91			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B23-Au0073115	NCP	%	87			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B23-Au0073115	NCP	%	84			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B23-Au0073115	NCP	%	83			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B23-Au0073115	NCP	%	66			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B23-Au0073115	NCP	%	99			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B23-Au0073115	NCP	%	86			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B23-Au0073115	NCP	%	110			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B23-Au0073115	NCP	%	68			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B23-Au0073115	NCP	%	102			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B23-Au0073115	NCP	%	96			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B23-Au0073115	NCP	%	88			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B23-Au0073115	NCP	%	69			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B23-Au0073115	NCP	%	134			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B23-Au0073115	NCP	%	109			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B23-Au0073115	NCP	%	89			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B23-Au0073115	NCP	%	89			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B23-Au0073115	NCP	%	69			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B23-Au0073115	NCP	%	57			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B23-Au0073115	NCP	%	79			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B23-Au0073115	NCP	%	58			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B23-Au0073115	NCP	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B23-Au0073115	NCP	%	87			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B23-Au0076537	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B23-Au0076537	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B23-Au0071306	NCP	ug/kg	**	1400	4.8	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B23-Au0076537	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B23-Au0076537	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager
[redacted] Senior Analyst-PFAS
[redacted] Senior Analyst-Sample Properties

[redacted]

Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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eurofins | Environment Testing

www.eurofins.com.au [redacted]

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	AECOM Aust Pty Ltd Brisbane
Contact name:	[redacted]
Project name:	60612487_3.1
Project ID:	QLD_0229_PFASOMP_23
Turnaround time:	5 Day
Date/Time received	Aug 29, 2023 9:25 AM
Eurofins reference	1021562

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 7.4 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted] **on phone : or by email:** [redacted]

Results will be delivered electronically via email to [redacted] - [redacted].

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Brisbane email address.

Appendix F

Calibration Certificates

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Lavarack Barracks OMP	**Project Number:**	60612487
Project Location:	Lavarack Barracks	**Client:**	Department of Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	AECOM
Make and Model:	YSI Pro DSS
Serial Number:	18K102334

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	21.08.2023				
Parameter	Acidity		Conductivity	ORP / Dissolved Oxygen	
Units	4 pH	7 pH	µS/cm	~~ppm~~ mV	~~ppm~~ %
Calibration Standard Concentration:	4	7.01	2760	232.7	100.5
Calibration Reading:	3.74	7.13	3852	245.5	102.7
Calibration Temperature:	23.4	23.5	23.5	23.7	23.3

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

21/8/23

Date

Distribution: Project Central File

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ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP Lavarrack	**Project Number:**	60612487
Project Location:	Lavarrack Barracks	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks

INSTRUMENT DETAILS

Supplier:	~~AECOM~~ AECOM
Make and Model:	Pro DSS YSI
Serial Number:	18K102384

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	22/8/23 07:10				
Parameter	Acidity		Conductivity	ORP / Dissolved Oxygen	
Units	4 pH	7 pH	µS/cm	mV ~~ppm~~	% ~~ppm~~
Calibration Standard Concentration:	4.0	7.02	2760	237.9	100.6
Calibration Reading:	3.85	7.11	2624	233.2	99.1
Calibration Temperature:	20.1	19.8	19.7	19.7	19.8

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

22/8/23 — Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612487_3.1
Project Location:	Lavarack Barracks	**Client:**	Dept of Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Airmet
Make and Model:	YSI Pro Quatro
Serial Number:	23E102252

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	22/8/23 0710				
Parameter	Acidity		Conductivity	ORP / Dissolved Oxygen	
Units	pH	pH	µS/cm	mV / ppm	ppm / %
Calibration Standard Concentration:	4.00	7.00	2.391	232.8	100.7
Calibration Reading:	3.82	7.07	2.302	235.5	102.5
Calibration Temperature:	18.4	18.3	18.3	18.3	19.6

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

22/8/23 — Date

Distribution: Project Central File

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FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612487_3.1
Project Location:	Lavarack Barracks	**Client:**	Dept. of Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Airmet
Make and Model:	YSI Pro Quatro
Serial Number:	23E102252

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	23/8/23 1100				
Parameter	Acidity		Conductivity	ORP / Dissolved Oxygen	
Units	pH	pH	µS/cm	mV / ppm	ppm %
Calibration Standard Concentration:	4.00	7.00	2655	225.1	100
Calibration Reading:	4.07	7.06	2669	224.2	99.9
Calibration Temperature:	22.9	23.0	23.2	23.7	31.4

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — **Fieldwork Staff Signature**

23/8/23 — **Date**

Distribution: Project Central File

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FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP Lavarack	**Project Number:**	60612487
Project Location:	Lavarack Barracks	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	AECOM
Make and Model:	YSI Pro DSS
Serial Number:	18K102334

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	24/8/23 0700				
Parameter	Acidity		Conductivity	ORP/Dissolved Oxygen	
Units	4 pH	7 pH	µS/cm	~~mV~~ ~~ppm~~	% ppm
Calibration Standard Concentration:	4.0	7.01	2760	237.8	100.3
Calibration Reading:	3.91	7.06	2618	234.4	99.7
Calibration Temperature:	19.8	19.7	20.0	19.7	19.9

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

24/8/23 — Date

Distribution: Project Central File

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FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	606/2487 3.1
Project Location:	Lavarack Barracks	**Client:**	Dept of Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Airmet
Make and Model:	451 Pro Quatro
Serial Number:	23E102252

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	24/8/23				
Parameter	Acidity		Conductivity	ORP / Dissolved Oxygen	
Units	pH	pH	µS/cm	mV ~~ppm~~	ppm ~~%~~
Calibration Standard Concentration:	4.00	7.00	2490	230.2	100
Calibration Reading:	4.10	7.08	2442	229.9	101.5
Calibration Temperature:	20.1	19.7	20.0	20.0	22.3

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

(✓) Each individual [redacted] ily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

24/8/23 — Date

Distribution: Project Central File

ANZ

AECOM

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612487_3.1
Project Location:	Lavarack Barracks	**Client:**	Dept of Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Airmet
Make and Model:	YSI Pro Quatro
Serial Number:	23E102252

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	25/8/23 0900				
Parameter	Acidity		Conductivity	ORP / Dissolved Oxygen	
Units	pH	pH	µS/cm	~~mV~~ ppm	~~ppm~~ %
Calibration Standard Concentration:	4.00	7.00	2549	227.7	100
Calibration Reading:	3.96	6.95	2529	227.1	95.6
Calibration Temperature:	21.0	21.1	21.9	21.8	26.3

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — **Fieldwork Staff Signature**

25/8/23 — **Date**

Distribution: Project Central File

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 23E102252

airmet
Air-Met Scientific Pty Ltd
[redacted]

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.00	**NIST**	399304	pH 7.02
2. pH 4.00		pH 4.00	**NIST**	399527	pH 4.00
3. mV		236.92mV	**NIST**	406331/402268	236.92mV
4. EC		1413uS	**NIST**	398532	1413uS
6. D.O		0 ppm	**NIST**	12111	0 ppm
7. Temp		21.4C	**NIST**	Testo Mini901	21.4C

Calibrated by: [redacted]

Calibration date: 16/08/2023

Next calibration due: 16/02/2024

Oil / Water Interface Meter

Instrument Interface Meter (60M)
Serial No. 288052

airmet
Air-Met Scientific Pty Ltd
[redacted]

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
Tape Check Connectors	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Tested by: [redacted]

Test date: 16/08/2023

Next Test due: 15/02/2024

Oil / Water Interface Meter

Instrument Interface Meter (30M)
Serial No. 348741

airmet
Air-Met Scientific Pty Ltd
[redacted]

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: 16/08/2023

Next calibration due: 16/10/2023

Prepared for
Department of Defence
ABN: 68 706 814 312

Wet Season Sampling Event Factual Report, March 2024

PFAS OMP - Lavarack Barracks Townsville

07-May-2024
PFAS Ongoing Monitoring Program - Lavarack Barracks Townsville
Doc No. 60612487_RP115_20240507_1

aecom.com

Delivering a better world

Wet Season Sampling Event Factual Report, March 2024

PFAS OMP - Lavarack Barracks Townsville

Client: Department of Defence

ABN: 68 706 814 312

Prepared by

AECOM Australia Pty Ltd
Wulgurukaba of Gurambilbarra and Yunbenun, Bindal, Gugu Badhun and Nywaigi Country, Lvl 5, 7 Tomlins Street, South Townsville QLD 4810, PO Box 5423, Townsville QLD 4810, Australia
T +61 1800 868 654 www.aecom.com
ABN 20 093 846 925

07-May-2024

Job No.: 60612487

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 and ISO45001.

Quality Information

Document Wet Season Sampling Event Factual Report, March 2024

Ref 60612487_RP115_20240507_1

Date 07-May-2024

Prepared by [redacted]

Reviewed by [redacted]

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	10-Apr-2024	Draft for Review	[redacted]	
1	07-May-2024	Final Issue	[redacted]	[redacted]

Table of Contents

1.0 Introduction 1
1.1 General 1
1.2 Objectives 1
2.0 Scope of Work 2
3.0 Methodology 4
3.1 Groundwater Sampling Methodology 4
3.2 Surface Water Sampling Methodology 4
3.3 Sediment Sampling Methodology 4
3.4 Quality Assurance / Quality Control and Analysis 5
3.5 Adopted Screening Criteria 5
3.6 Data Quality Objectives and Data Validation 6
3.7 Deviations from the SAQP 6
4.0 Field Observations and Results 7
4.1 Groundwater 7
4.1.1 Observations and Field Measurements 7
4.1.2 Groundwater Analytical Results 9
4.2 Surface Water 9
4.2.1 Observations and Field Measurements 9
4.2.2 PFAS Surface Water Analytical Results 10
4.3 Sediment 11
4.3.1 Observations and Field Measurements 11
4.3.2 PFAS Sediment Analytical Results 11
5.0 Summary and Next Sampling Event 12
5.1 Summary of Sampling Event 12
5.2 Upcoming Sampling Events 12
5.3 Upcoming Ongoing Monitoring Report 12
6.0 References 13

Appendix A
Figures A

Appendix B
Analytical Tables B

Appendix C
Data Validation C

Appendix D
Chain of Custody Records D

Appendix E
Laboratory Analytical Reports E

Appendix F
Calibration Certificates F

List of Figures (Appendix A)

Figure 1 Lavarack Barracks Location and Source Areas
Figure 2 Groundwater Monitoring Locations
Figure 3 Surface Water and Sediment Monitoring Locations
Figure 4 Inferred Groundwater Contours - Shallow Aquifer (Alluvium) Wet Season – March 2024

List of Tables (Appendix B)

Table T1 Groundwater Gauging and Water Quality Parameters
Table T2 Groundwater PFAS Analytical Results
Table T3 Surface Water Quality Parameter Results
Table T4 Surface Water PFAS Analytical Results
Table T5 Sediment Observation Results
Table T6 Sediment PFAS Analytical Results
Table T7 Historical Groundwater PFAS Analytical Results
Table T8 Historical Surface Water PFAS Analytical Results
Table T9 Historical Sediment PFAS Analytical Results

Abbreviations

Term	Description
AECOM	AECOM Australia Pty Ltd
AFFF	Aqueous film forming foam
ALS	Australian Laboratory Services Environmental Pty Ltd
ANZG	Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2018)
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure, as amended (2013)
BOM	Bureau of Meteorology
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved oxygen
DQIs	Data quality indicators
DQOs	Data quality objectives
EC	Electrical conductivity
HEPA	Heads of Environmental Protection Agencies
IP	Interface probe
LOR	Limit of reporting
mBTOC	Metres below top of casing
mAHD	Metres Australian Height Datum
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NHMRC	National Health and Medical Research Council
NMI	National Measurement Institute
OMP	Ongoing Monitoring Plan
ORP	Oxidation-reduction potential
PFAS	Per- and poly-fluoroalkyl substances
PFHxS	Perfluorohexane sulfonate
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate
PMAP	PFAS Management Area Plan
QA/QC	Quality Assurance/Quality Control
QLD	Queensland
SAQP	Sampling Analysis Quality Plan
SD	Sediment
SW	Surface Water

List of Units

Unit	Definition	Unit	Definition
°C	Degrees Celsius	mg	Milligrams
L	Litre	mm	Millimetre
µS	Microsiemens	cm	Centimetre
kg	Kilogram	mV	Millivolts
m	Metre	µg	Micrograms

1.0 Introduction

1.1 General

AECOM Australia Pty Ltd (AECOM) was engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) outlined in the PFAS Management Area Plan (PMAP) (Department of Defence, 2020) at Lavarack Barracks Townsville (the 'Base') located in the North Queensland Region. The location of the Base and the PFAS Source Areas are shown in **Figure 1** in **Appendix A**. PFAS Source Areas are identified and defined in the PMAP (Department of Defence, 2020).

The OMP (Department of Defence, 2020) for Lavarack Barracks includes biannual groundwater, surface water, and sediment sampling events in October 2020, March/April 2021, August 2021, February to April 2022, August to October 2022, March 2023, August 2023, and March 2024.

These sampling events were scheduled to include:

- Groundwater sampling of 29 on-Base wells at Lavarack Barracks and nine off-Base wells in the suburbs of Annandale, Idalia, and Wulguru.
- Sediment sampling at 18 on-Base locations at Lavarack Barracks and 13 off-Base locations in the Ross River and waterways in Annandale and Idalia with co-located surface water sampling when water is present.

A Sampling Analysis and Quality Plan (SAQP Rev 9, AECOM, 2024) was prepared to provide details of the sampling event. Where deviations from the SAQP (AECOM, 2024) occurred, these are noted in this report in **Section 3.7**.

This sampling event factual report has been prepared to report the results of the 2024 Wet Season Sampling Event, which was completed from 4 to 12 March 2024. This report specifically highlights first-time detections and/or new exceedances of human health or ecological screening criteria for perfluorooctane sulfonate (PFOS), PFOS + perfluorohexane sulfonate (PFHxS) and / or perfluorooctanoic acid (PFOA).

This report has been prepared in accordance with the *PFAS OMP Factual Report Guidance,* v0.2, May 2021 (Department of Defence, 2021).

1.2 Objectives

The objectives of the OMP program are to:

- Implement the OMP prepared as part of the PMAP.
- Collect data that will enable Defence to maintain an up to date understanding of the distribution, concentration, and transport of PFAS at Lavarack Barracks.

The data collected as part of the scheduled sampling events will assist in the timely identification of risks and inform Defence's approach to the management of PFAS to protect human health and the environment, including updates and revisions to the PMAP.

The objective of this phase of works is to implement the 2024 Wet season sampling event scope of works in accordance with the SAQP (AECOM, 2024).

2.0 Scope of Work

The sampling event at the Base was completed in general accordance with the SAQP (AECOM, 2024). In summary, the scope of works for this March 2024 Wet Season sampling event included:

- Review of the SAQP prior to the monitoring event to ensure compliance with relevant Australian guidance and suitable for the proposed sampling.
- Collection of 30 sediment (18 on-Base and 12 off-Base locations) and 30 co-located surface water samples (where water was present) (refer to **Figure 2** and **3**, **Appendix A**). One location was unable to be accessed due to unsafe access to the Ross River.
- Collection of groundwater samples at 38 locations including 29 on-Base and 9 off-Base locations.
- Collection of groundwater gauging data (at all 38 wells) and water quality parameter data for surface water and groundwater sample locations (where water was present).
- Analysis of all samples for the PFAS suite (28 analytes) at the standard laboratory limit of reporting (LOR).
- Collection of field duplicate and triplicate samples at a rate of 1 in 10 primary samples, one rinsate sample per fieldwork day per field team where non-dedicated equipment was used, and one trip blank per batch analysed for PFAS suite (28 analytes).
- Data management of all OMP field and laboratory data in the Defence ESdat database.
- Preparation of this Sampling Event Factual Report.

Refer tables below for nominated sampling locations as outlined in the SAQP (AECOM, 2024). Deviations from the SAQP are identified in **Section 3.7**.

Table 1 Planned Groundwater Sampling Locations

Source Area	Monitoring Well ID	Total wells
Eastern PFAS Contamination Area	MW018, MW114, MW115, MW116, MW139	5
Former B Squadron	MW135	1
Former Fire Station	MW105, MW128	2
Former Fire Training Area	MW131	1
Former Helicopter Squadron	MW102	1
Lavarack Golf Course and Sporting Fields	MW065, MW120, MW121, MW122, MW123I, MW123S	6
Monocell	MW072, MW074, MW106	3
Stockpile Designated Area 2	MW141	1
Suspected Aqueous Film Forming Foam (AFFF) Disposal Area	MW101	1
Top, Middle and Lower Dams	MW138	1
Base Boundary – On-Base	MW002, MW003, MW118, MW119, MW124, MW125I, MW125S	7
	On-Base Sub-total	**29**
Off-Base	MW205S, MW212, MW217, MW220S, MW226*, MW232, MW233, MW235S, MW236S	9
	Total	**38**

*Location not presented in Appendix A – Figure 2 for privacy reasons.

Table 2 Planned Surface Water Sampling Locations

Source Area	Surface Water Location ID	Total
Eastern PFAS Contamination Area	SW119, SW121	2
Former Fire Station	SW109, SW110	2
Lavarack Golf Course & Sporting Field	SW129, SW130	2
Top, Middle and Lower Dams	SW139, SW140, SW144	3
Remaining on-Base	SW113, SW120	2
Base Boundary	SW126, SW128, SW132, SW133, SW134, SW135, SW136	7
	On-Base Sub-total	**18**
Off-Base	SW203, SW205[#], SW211, SW212, SW217, SW220, SW227, SW232, SW233, SW242, SW243, SW244, SW245	13
	Total	**31**

[#] Location was not accessible during wet season 2024 sampling event and therefore no sample was collected at this location.

Table 3 Planned Sediment Sampling Locations

Source Area	Sediment Location ID	Total
Eastern PFAS Contamination Area	SD119, SD121	2
Former Fire Station	SD109, SD110	2
Lavarack Golf Course and Sporting Fields	SD129, SD130	2
Top, Middle and Lower Dams	SD139, SD140, SD144	3
Remaining on-Base	SD113, SD120	2
Base Boundary	SD126, SD128, SD132, SD133, SD134, SD135, SD136	7
	On-Base Sub-total	**18**
Off-Base	SD203, SD205[#], SD211, SD212, SD217, SD220, SD227, SD232, SD233, SD242, SD243, SD244, SD245	13
	Total	**31**

[#] Location was not accessible during wet season 2024 sampling event and therefore no sample was collected at this location.

3.0 Methodology

The methodology used for the 2024 wet season sampling event was in general accordance with the SAQP (AECOM, 2024) and is summarised in **Sections 3.1**-**3.3**.

3.1 Groundwater Sampling Methodology

The groundwater sampling methodology is outlined in **Table 4** below.

Table 4 Groundwater Sampling Methodology

Item	Details
Groundwater Gauging	The depth to groundwater was measured in each monitoring well prior to the installation of HydraSleeves™ and immediately prior to collection of groundwater samples using an interface probe (IP).
Water Quality Parameters	Temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation reduction potential (ORP), pH and observations of water quality were recorded using a calibrated water quality meter (results detailed in **Table T1, Appendix B**). Equipment calibration certificates for the water quality meter are provided in **Appendix F**.
Sampling Methodology	Groundwater samples were collected from all monitoring wells using no-purge methodology HydraSleeves™, which were installed within the screened interval of each well (based on a review of the well construction log) for a minimum of 24 hours prior to the sampling round (as detailed in **Table T1**, **Appendix B**). For wells without available construction details, HydraSleeves™ were installed at the bottom of the well, consistent with the screened interval for wells installed in the same aquifer. Where the water column was measured to be less than 1.5 m but more than 0.5 m, a top weight was added to the HydraSleeve™ before installation to ensure adequate sample volume could be collected.

3.2 Surface Water Sampling Methodology

The surface water sampling methodology is outlined in **Table 5** below.

Table 5 Surface Water Sampling Methodology

Item	Details
Water Quality Parameters	Temperature, EC, DO, ORP, pH and observations of water quality were recorded using a calibrated water quality meter. Equipment calibration certificates for the water quality meter are provided in **Appendix F**.
Sampling Methodology	Samples were collected directly into laboratory supplied containers, from immediately below the water surface, to minimise collection of sediment or floating materials in the samples. Where the waterway could not be accessed from the bank a telescopic sampler with a decontaminated stainless-steel scoop was used to collect the sample. Where required, a boat was used to access some locations of the Ross River. The sample was immediately transferred into new laboratory supplied containers at each sample location, with the cap immediately applied once the container was full.

3.3 Sediment Sampling Methodology

The sediment sampling methodology is outlined in **Table 6** below.

Table 6 Sediment Sampling Methodology

Item	Details
Sampling Methodology	Samples representative of potentially deposited sediments were collected from within the water body using a decontaminated steel trowel or gloved hand from the base of drains (where possible). Samples were collected from the surface of the sediment up to a depth of 0.1 m, where this depth was achievable. At each location, a new laboratory supplied container was used for each sample.
Logging	Sediment characteristics were recorded for each sample and are presented in **Table T5**, **Appendix B**.

3.4 Quality Assurance / Quality Control and Analysis

The Quality Assurance / Quality Control (QA/QC) requirements and analysis completed for the OMP sampling event are summarised in **Table 7**, below.

Table 7 QA/QC and Analysis for OMP

Item	Details
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e., splits), trip blank samples and rinsate samples. Intra- and inter-laboratory samples were collected at a rate of one per ten primary samples. Trip blanks were prepared in the laboratory by filling sampling containers with laboratory supplied PFAS-free deionised water and were included at a rate of one per batch of samples (excluding private property sampling). Rinsate samples were collected at a rate of one per day of sampling when non-dedicated equipment was used by pouring laboratory supplied PFAS-free deionised water over the decontaminated sampling equipment. Additional sample volume was collected to enable the appropriate laboratory QA/QC for all water samples. Refer to **Appendix C** for assessment of QA/QC sample data.
Sample Analysis	All primary samples were submitted for PFAS suite analysis using the standard levels of detection. Australian Laboratory Services (ALS) Environmental Brisbane, Queensland (QLD) was used as the primary laboratory. Eurofins Brisbane, QLD was used as the secondary laboratory. ALS and Eurofins methods for the required analyses are certified by the National Association of Testing Authorities (NATA). Chain of Custody Forms are presented in **Appendix D**. Laboratory certificates are presented in **Appendix E**.

3.5 Adopted Screening Criteria

Adopted screening criteria references national guidance in the form of the PFAS National Environmental Management Plan (NEMP), Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance. Guidance documents used to assess the dataset include the following:

- PFAS NEMP, Heads of Environmental Protection Agencies (HEPA) (2020).
- Department of Health, 2019. *Health Based Guidance Values for PFAS for use in site investigations in Australia*. April 2017 [updated September 2019].
- National Health and Medical Research Council (NHMRC), 2019. *Guidance on PFAS in Recreational Water*. August 2019 (NHMRC 2019).

- *National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013* (ASC NEPM, 2013).

In accordance with the OMP (Defence, 2020) and SAQP (AECOM, 2024), the adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 8** below.

Table 8 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Off-Base - Drinking Water	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). Where the guideline value refers to the sum of PFOS + PFHxS, this includes PFOS only, PFHxS only and the sum of the two (HEPA, 2020). *All off-Base groundwater results will be compared to these criteria as well as one surface water location (SW245) which is within Townsville's emergency drinking water supply.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater and marine water (95% species protection values)	PFOS	0.13 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All surface water and groundwater results will be compared to these criteria.*
	PFOA	220 µg/L	

There are no current HEPA (2020) endorsed guideline values for PFAS in sediment.

3.6 Data Quality Objectives and Data Validation

The data quality objectives (DQO) and data quality indicators (DQI) adopted for these works are presented in the SAQP (AECOM, 2024).

The data validation assessment is provided in **Appendix C**.

Data validation of the field and laboratory QA/QC data indicated that the reported analytical results are representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report.

All data collected during March 2024 have been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (DCMM) (Defence, 2018 as amended 2021) Annex L requirements.

3.7 Deviations from the SAQP

Table 9 lists the deviations from the SAQP (AECOM, 2024) during this sampling round.

Table 9 Deviations from the SAQP during 2024 Wet Season Sampling Event

SAQP Deviation	Comment/Justification	Impact on Dataset
Surface water and sediment not sampled at SW/SD205	No safe access to this location due to overgrown vegetation and steep bank.	Minor. The current and historical data set is considered representative of broader on- and off-Base conditions.

4.0 Field Observations and Results

The 2024 wet season sampling event was completed between 4 and 12 March 2024.

Details on weather conditions and estate management works or training activities during the sampling event are recorded in **Table 10**.

Table 10 Weather Conditions and Estate Activities at Time of Sampling

Item	Observations
Weather Conditions	The Bureau of Meteorology (BOM) (BOM, 2024) reported the following monthly rainfall data leading up to and during the 2024 wet season sampling event at Bureau Station 032195 Mount Stuart (Defence): • November 2023: 5.2 mm • December 2023: 159.4 mm • January 2024: 222.2 mm • February 2024: 326.6 mm • March 2024: 121.8 mm Weather was generally wet and humid during the sampling program in March 2024. Gauging day was completed on 12 March 2024 due to heavy rain received on the initial attempt at gauging day on 5 March 2024 where 60 mm of rain was recorded in one hour and localised flooding occurred. The conditions monitored were representative of wet season conditions within the Management Area.
Estate Management Works or Training Activities	Road construction works were observed on-Base on Melton Black Drive and at the corner of Robert Towns Boulevard and Cluden Drive. There were no other soil disturbance activities, estate management works, or training exercises identified during the sampling event which impacted access to sample groundwater, surface water, and sediment locations.
Off-Base activities	Road construction works along Stuart Drive, Idalia were observed during the sampling program in March 2024. A fenced off laydown area for Murray Skate Park was also observed during the sampling program in March 2024.

The results of the sampling event are summarised in **Sections 4.1**-**0**.

4.1 Groundwater

4.1.1 Observations and Field Measurements

Table 11 Groundwater Observations and Field Measurements

Item	Observations
Access	All monitoring wells were accessible.
Monitoring Well Network	All monitoring wells were observed to be in good serviceable condition except for MW115 which has a bend in the casing approximately 0.75 metres below top of casing (mBTOC). A HydraSleeve™ was deployed at MW115 without a collar and was able to be sampled. It was identified that the recorded screen interval data in the ESdat database at MW102 and MW205S was deeper than the measured well depth. Following review of the data for MW102 and MW205S, the results were found to be consistent with the historical results for these locations, and as sampling was still conducted within the screen intervals, the samples collected during the 2024 wet season sampling event are considered representative of the groundwater conditions at these locations.

Item	Observations
Field Observations	Odours were noted during sampling at the following groundwater monitoring wells: • Slight organic odour: MW212, MW233, MW235S and MW236S • Organic odour: MW226 • Sulfuric odour: MW217 and MW220S Groundwater colour was typically recorded as clear except for: • Light brown coloured groundwater at MW105, MW124, MW217, MW235S and MW236S. • Light yellow coloured groundwater at MW212 • Brown coloured groundwater at MW226. Turbidity was typically recorded as clear, with low turbidity observed at MW003, MW205S, MW212, MW220S, MW226, MW232 and MW233. Medium turbidity was observed at MW105, MW217 and MW236S. Turbid water was observed at MW123S and MW235S. No visible or olfactory indications of contamination were observed during the sampling round. Field observations are presented **Table T1** in **Appendix B**.
Depth to Groundwater	Depth to groundwater ranged between 0.285 (MW226) and 4.982 (MW235S) mBTOC. There is more than one groundwater system across the Management Area. Groundwater elevations within the shallow (alluvial) aquifer were between 1.467 (MW205S) and 26.648 (MW141) metres Australian Height Datum (mAHD). Groundwater elevations within the deeper (rock) aquifer were between 7.999 (MW115) and 19.898 (MW106) mAHD. Groundwater gauging data are presented in **Table T1** in **Appendix B**.
Groundwater Flow Direction	Groundwater contours and inferred groundwater flow directions in March 2024 are shown on **Figure 4** in **Appendix A**. The inferred local groundwater flow direction for the shallow aquifer is to the north. Monitoring wells MW003, MW106, MW115, MW119, MW122, MW123I, MW125I, which are in the deeper aquifer or the tidally influenced wells MW205S, MW220S, MW232, MW235S, MW236S have been removed from the contours. MW226 was not included in **Figure 4** as this is located on private property and the landholder opted out for showing locations on figures this sampling round.
Water Quality Parameters	Groundwater quality parameters were measured at the time of sampling. The readings are presented in **Table T1** in **Appendix B** and are summarised below, covering all sampling completed: • DO results ranged between 0.4 mg/L (MW115) to 5.79 mg/L (MW212) indicating poorly to moderately oxygenated conditions across the Management Area. • EC ranged from 197.9 µS/cm (MW122) to 41,687 µS/cm (MW232) indicating fresh to saline conditions across the Management Area. • pH ranged from 6.25 (MW232) to 7.51 (MW114). pH results generally indicated slightly acidic to slightly alkaline conditions across the Management Area. • Corrected ORP ranged from 194.9 mV (MW226) to 279.9 mV (MW118) indicating weakly to moderately oxidising conditions. • Temperature ranged from 27.6 °C (MW122) to 32.8 °C (MW118). These results are generally consistent with the groundwater quality parameters from the previous five groundwater monitoring rounds since wet season 2021.

4.1.2 Groundwater Analytical Results

Of the 38 groundwater wells sampled during this event, 33 samples reported concentrations of PFAS at or above the laboratory LOR. PFAS was not detected in groundwater at MW003, MW124, MW212, MW217 and MW233. The groundwater analytical results from this sampling event are presented in **Table T2** in **Appendix B**.

There were no first-time detections of PFOS, PFOA, or PFOS + PFHxS. There were no new exceedances of the human health drinking water guideline during the sampling event.

Fourteen on-Base samples exceeded the adopted ecological guideline for PFOS. Four of the nine samples collected off-Base exceeded the human health drinking water guideline for PFOS + PFHxS. There were no on- or off-Base exceedances of the PFOA ecological guideline in groundwater.

New historical maximums were reported during the March 2024 sampling round as summarised in **Table 12.**

Table 12 Locations of New Historical Maximums for Groundwater

Compound	Location
	On Base
PFOS	MW125S, MW135
PFOA	MW125S
PFOS + PFHxS	MW116, MW125I, MW125S

Groundwater sampling results were generally within the same order of magnitude as historically reported concentrations.

Historical groundwater results are presented in **Table T7**, **Appendix B**.

4.2 Surface Water

4.2.1 Observations and Field Measurements

Table 13 Surface Water Observations and Field Measurements

Item	Observations
Access	All surface water locations were accessible during the March 2024 sampling event except for SW205 which was overgrown and steep. It was unsafe to access in the wet conditions experienced during the sampling round.
Field Observations	A slight biological sheen was observed at SW217 and SW242. Surface water on-Base was observed to be generally clear. Light olive brown surface water was observed at SW119, SW110 and SW139. Yellowish red surface water was observed at SW135. Surface water off-Base was observed to be clear at SW212, SW217 and SW220. Light olive brown surface water was observed at SW232, SW242 and SW243. Light brown surface water was observed at SW227, SW244 and SW245. Pale yellow surface water was observed at SW211 and SW203. Dark reddish brown surface water was observed at SW233. Surface water from the following surface water locations had the following odours: • Slight organic odour: SW113, SW119 • Organic odour: SW130, SW132, SW134 • Sulfuric odour: SW211

Item	Observations
	No other visible or olfactory indications of contamination were observed during the sampling of the surface water locations. Field observations are presented **Table T3** in **Appendix B**.
Water Quality Parameters	Surface water quality parameters were measured at the time of sampling. Readings are presented in **Table T3** in **Appendix B** and are summarised below: • DO results ranged between 1.35 mg/L (SW144) and 8.19 mg/L (SW227) indicating moderately to well oxygenated conditions. • EC ranged from 27.6 µS/cm (SW133) to 10,093 µS/cm (SW243) indicating relatively fresh conditions in urban runoff areas and saline conditions in areas with tidal connectivity. The EC range is lower than previous sampling rounds indicating potential dilution due to heavy rain experienced during the March 2024 sampling round. • pH ranged from 6.53 (SW140) to 9.51 (SW130). pH results generally indicated slightly acidic to alkaline conditions. • Corrected ORP ranged from 248.3 mV (SW129) to 387.5 mV (SW243) indicating mildly to moderately oxidising conditions. The corrected ORP reading for SW119 was identified as a potential outlier with a value of 1,012 mV. • Temperature ranged from 27.0°C (SW133) to 38.3°C (SW130).

4.2.2 PFAS Surface Water Analytical Results

Of the 30 surface water samples collected, 24 reported concentrations of PFAS above the laboratory LOR. The surface water analytical results from this sampling event are presented in **Table T4** in **Appendix B**. There were no first-time detections or new exceedances of PFOS, PFOA or sum of PFOS + PFHxS.

PFOS concentrations in ten on-Base samples and three off-Base samples exceeded the adopted ecological guidelines for PFOS. Sum of PFOS + PFHxS concentrations in two on-Base samples exceeded the human health recreational guideline.

New historical maximums were recorded during the March 2024 sampling round as summarised in **Table 14**.

Table 14 Locations of New Historical Maximums for Surface Water

Compound	On Base Location
PFOS	SW144
PFOS + PFHxS	SW144

Historical surface water results are presented in **Table T8**, **Appendix B**.

4.3 Sediment

4.3.1 Observations and Field Measurements

Table 15 Sediment Observations

Item	Observations
Access	During the March 2024 sampling event, sediment was collected at all sampling locations except for SD205 which was overgrown and steep. It was unsafe to access in the wet conditions experienced during the sampling round.
Field Observations	An organic odour was noted at SD119, SD130, SD140, SD113, SD132, SD134 and SD245. A sulfuric odour was noted at SD242. No visible or olfactory indications of contamination were observed during the sampling of the sediment locations. Sediment logging and observation data are presented in **Table T5**, **Appendix B**.

4.3.2 PFAS Sediment Analytical Results

Of the 30 sediment samples collected, 17 on-Base and seven off-Base samples reported concentrations of PFAS above the laboratory LOR. There are no endorsed human health or ecological guideline values available for PFAS in sediment. The sediment analytical results from this sampling event are presented in **Table T6** in **Appendix B**.

There were no first-time detections of PFOS, PFOA or sum of PFOS + PFHxS during the sampling event.

New historical maximums were reported during the March 2024 sampling round as summarised in **Table 16**.

Table 16 Locations of New Historical Maximums for Sediment

Compound	On Base Location
PFOS	SD128, SD139
PFOA	SD217
PFOS + PFHxS	SD128, SD139

Historical sediment results are presented in **Table T9**, **Appendix B**.

5.0 Summary and Next Sampling Event

5.1 Summary of Sampling Event

The routine OMP Wet Season Sampling Event was undertaken at the Base between 4 and 12 March 2024. This wet season sampling event included sampling from 38 groundwater monitoring locations, 30 surface water monitoring locations and 30 sediment monitoring locations.

Table 17 summarises the findings of the March 2024 sampling events and the recommended actions.

Table 17 Summary of Sampling Event

Item	Comment	Recommended Actions
Access to sampling locations	All groundwater monitoring wells were accessible during the wet season monitoring event. SW/SD205 was not safely accessible during the wet season sampling event as it was overgrown and steep. It was unsafe to access in the wet conditions experienced during the sampling round.	Ongoing monitoring in accordance with the OMP.
Analytical Results	PFAS were detected at or above the laboratory LOR in 33 of the 38 groundwater samples, 24 of the 30 surface water samples and 24 of the 30 sediment samples analysed.	Ongoing monitoring in accordance with the OMP.
First-time detections and **new exceedances**.	There were no first-time detections or new exceedances of PFOS, PFOS + PFHxS or PFOA in the groundwater, surface water and sediment samples collected in March 2024.	Ongoing monitoring in accordance with the OMP.
New historical maximums	New historical maximum concentrations of PFOS, PFOS + PFHxS, or PFOA were detected at the following locations: Groundwater: MW116, MW125I, MW125S and MW135 Surface water: SW144 Sediment: SD128, SD139 and SD217	Ongoing monitoring in accordance with the OMP.

5.2 Upcoming Sampling Events

The next biannual sampling event in accordance with the PMAP will be in August 2024.

5.3 Upcoming Ongoing Monitoring Report

The next ongoing monitoring report is scheduled for late 2024, following the next sampling round.

6.0 References

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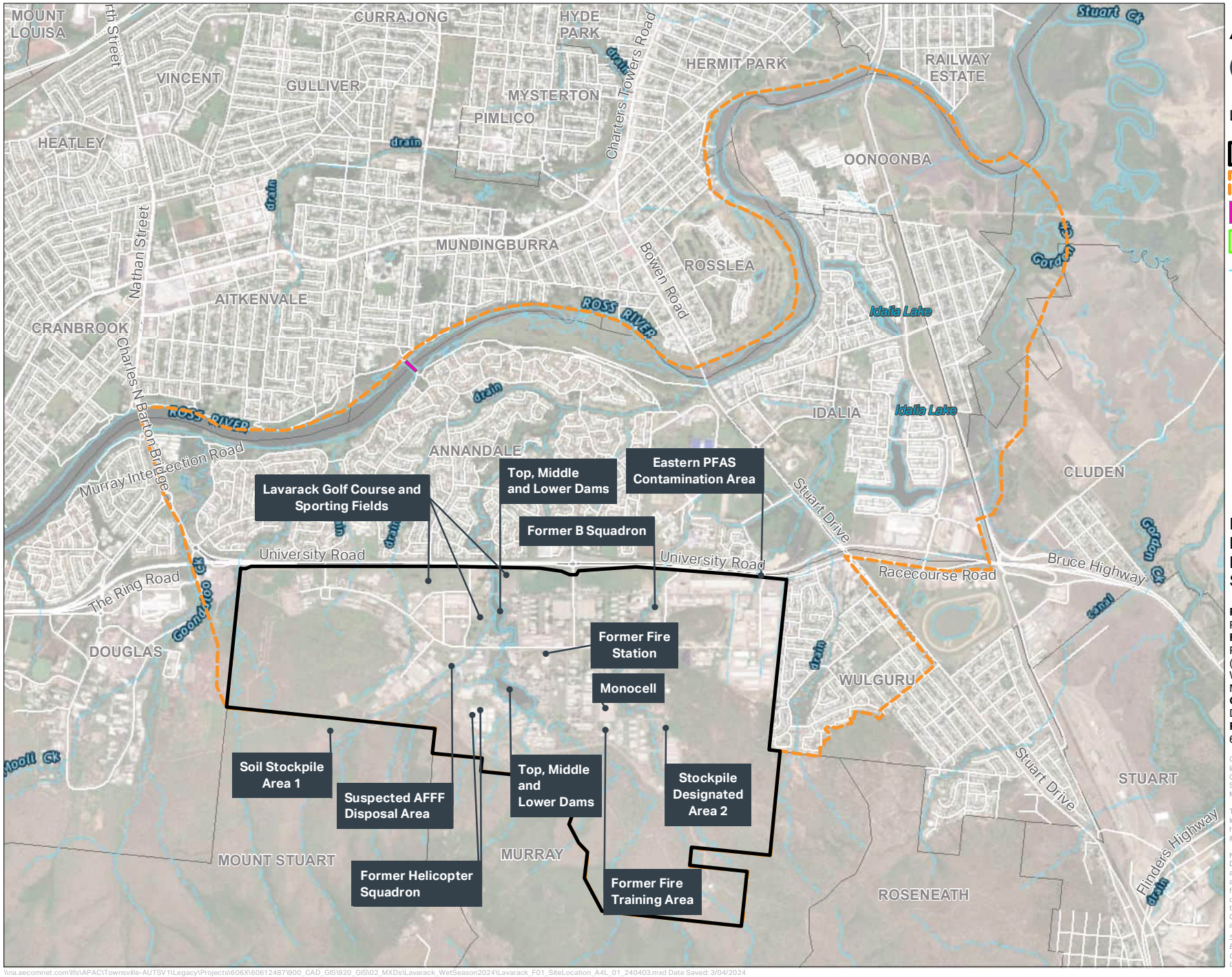
Appendix A

Figures



AECOM

N

0 390 780 m

Legend

- Base Boundary
- Management
- Aplin's Weir
- Source Areas
- Watercourses

FIGURE 1:
LAVARACK BARRACKS LOCATION AND SOURCE AREAS

PROJECT NAME:
PFAS OMP
REPORT NAME:
PFAS OMP – Lavarack Barracks (0229) Townsville,
Wet Season Sampling Factual Report
March 2024
CLIENT NAME:
Department of Defence
PROJECT NUMBER:
60612487

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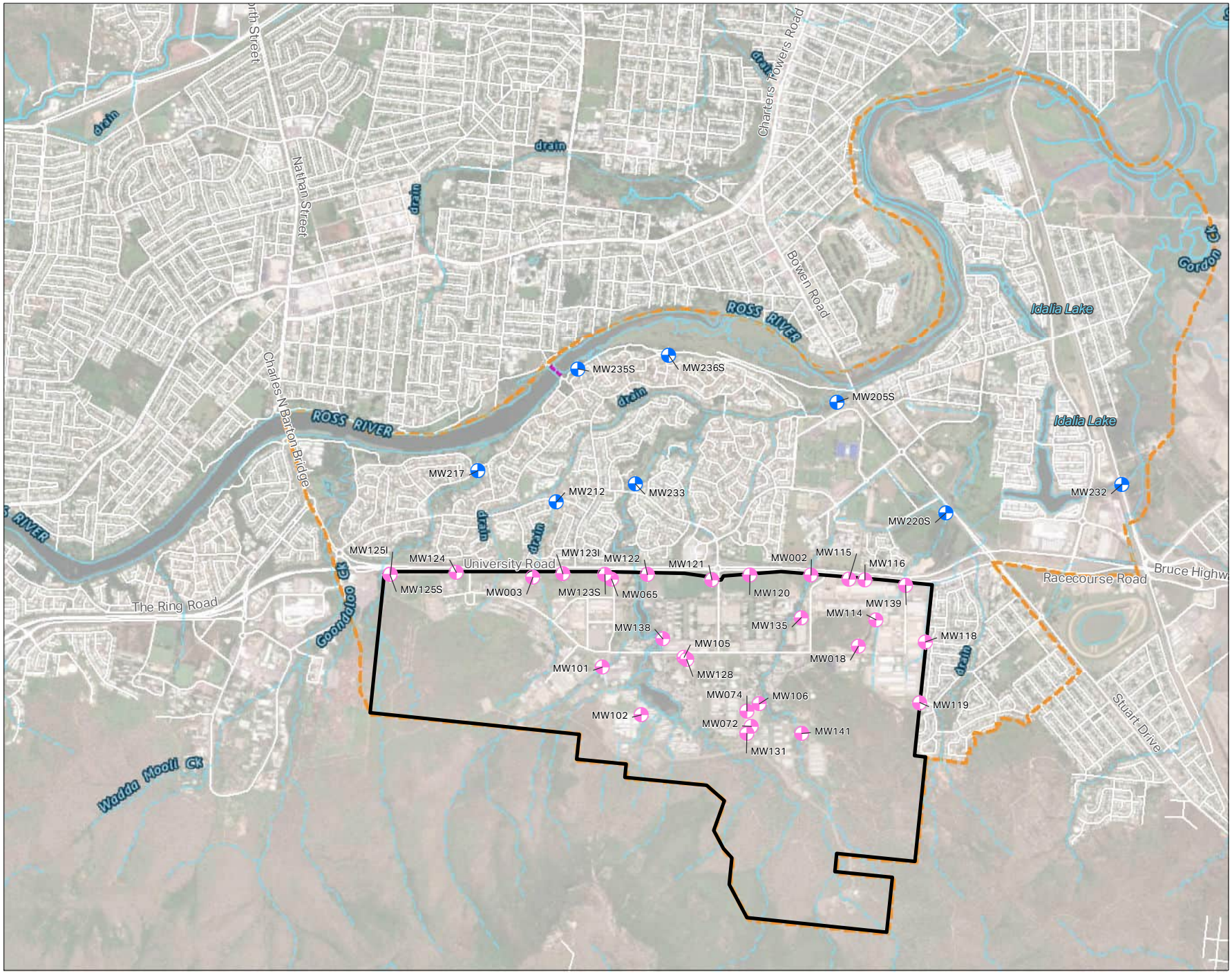

AECOM

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0 390 780 m

Legend

- Property Boundary
- Management
- Aplin's Weir
- Source Areas
- Watercourses
- On-Base Monitoring Well
- Off-Base Monitoring Well

FIGURE 2:
GROUNDWATER MONITORING LOCATIONS

PROJECT NAME:
PFAS OMP
REPORT NAME:
PFAS OMP – Lavarack Barracks (0229) Townsville,
Wet Season Sampling Factual Report
March 2024
CLIENT NAME:
Department of Defence
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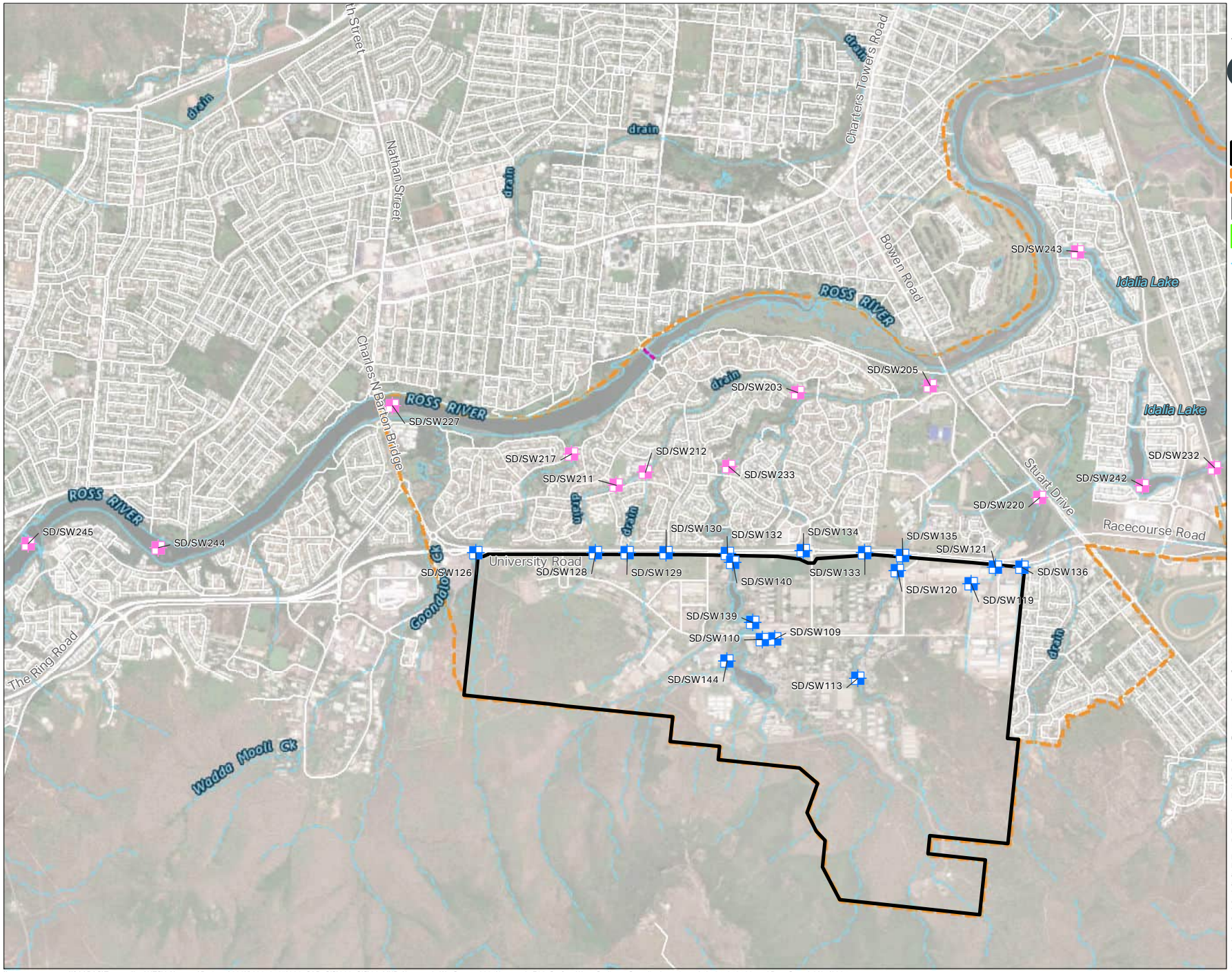

AECOM

N

0 350 700 m

Legend

- Property Boundary
- Management
- Aplin's Weir
- Source
- Watercourses
- On-Base Co-located Surface Water and Sediment Sample Location
- Off-Base Co-located Surface Water and Sediment Sample Location

FIGURE 3:
SURFACE WATER AND SEDIMENT MONITORING LOCATIONS

PROJECT NAME:
PFAS OMP
REPORT NAME:
PFAS OMP – Lavarack Barracks (0229) Townsville,
Wet Season Sampling Factual Report
March 2024
CLIENT NAME:
Department of Defence
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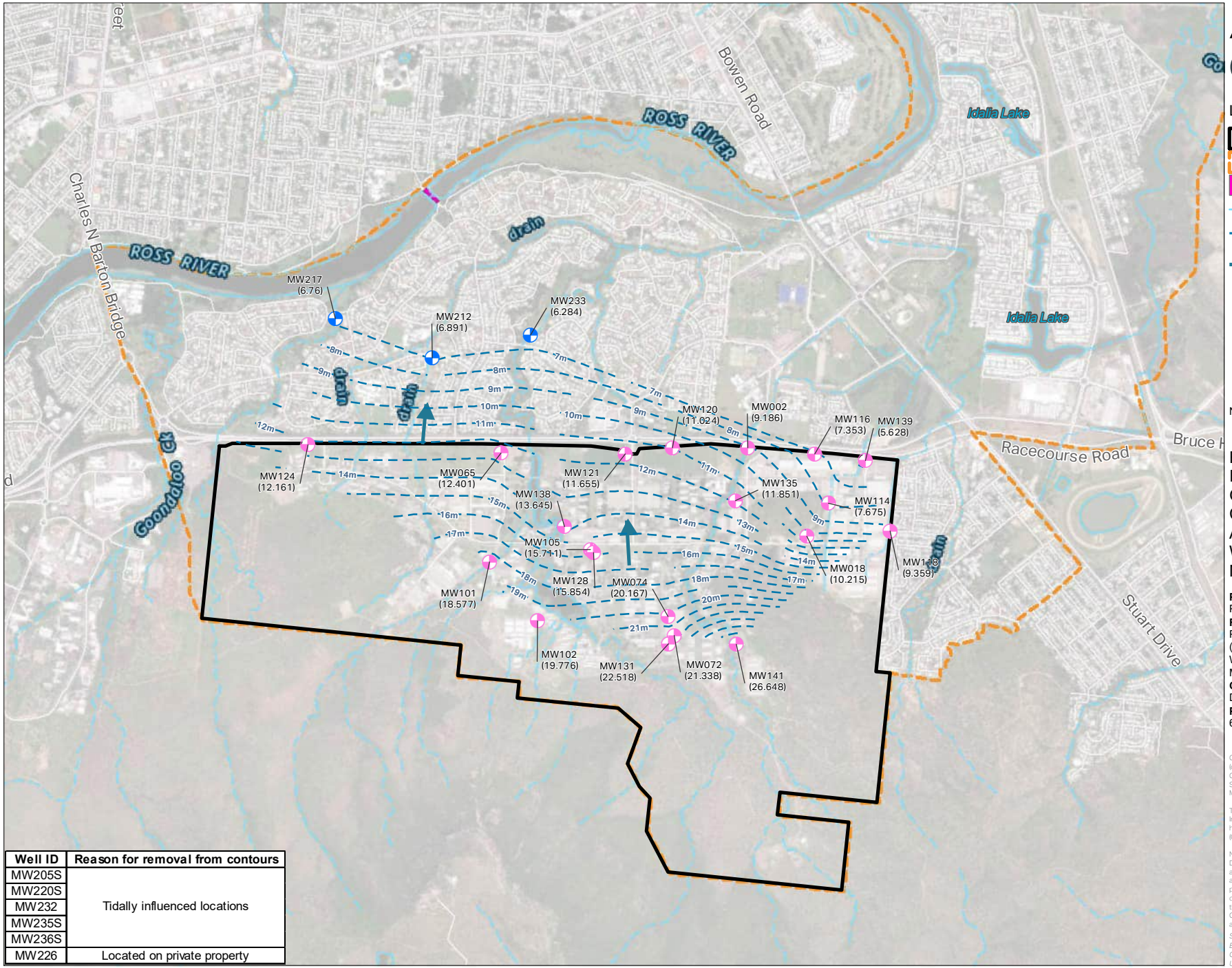
Sources:
Base Data: (c) 2020 (ESRI, Digital Globe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN and the GIS User



Well ID	Reason for removal from contours
MW205S	Tidally influenced locations
MW220S	
MW232	
MW235S	
MW236S	
MW226	Located on private property

AECOM

N

0 320 640 m

Legend

- Property Boundary
- Management Area
- Aplin's Weir
- Watercourses
- Groundwater Contour
- Inferred Groundwater Flow Direction
- On-Base Monitoring Well
- Off-Base Monitoring Well

Note: All elevations are in m AHD.

FIGURE 4: INFERRED GROUNDWATER CONTOURS- SHALLOW AQUIFER (ALLUVIUM) WET SEASON - MARCH 2024

PROJECT NAME:
PFAS OMP
REPORT NAME:
PFAS OMP – Lavarack Barracks (0229) Townsville,
Wet Season Sampling Factual Report
March 2024
CLIENT NAME:
Department of Defence
PROJECT NUMBER:
60612487

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Sources:
Base Data: (c) 2020 (ESRI, Digital Globe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN and the GIS User

Appendix B

Analytical Tables

Location Code	HydraSleeve™ Installation Date	Gauging Date	Gauging Time	Sample Date	Well Screen Depths (mbtoc)	Well Depth (mbtoc)	Depth to Water (mbtoc)	Aquifer	HydraSleeve™ Installation Depth (mbTOC)*	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Condition of Well	DO (mg/L)	EC (µS/cm)	pH	Redox (mV)	Corrected Redox (mV)	Temp (°C)	Turbidity	Water Colour	Odour	Sheen	Sample Method/Comments
Eastern PFAS Contamination Area																							
MW018	5/03/2024	12/03/2024	1010	7/03/2024	Not available in ESdat	9.060	2.215	Shallow	7.760	12.43	10.215	Good	0.55	20779	7.05	59.0	253.2	29.8	Clear	Clear	No odour	No sheen	HydraSleeve™
MW114	5/03/2024	12/03/2024	1020	7/03/2024	Not available in ESdat	6.691	1.225	Shallow	5.391	8.9	7.675	Good	1.64	19221	7.51	58.1	252.5	29.6	Clear	Clear	No odour	No sheen	HydraSleeve™
MW115	5/03/2024	12/03/2024	1045	8/03/2024	12.7 - 15.7	15.851	1.761	Deep	14.551	9.76	7.999	Good	0.4	932	7.24	10.3	205.3	29	Clear	Clear	No odour	No sheen	HydraSleeve™
MW116	5/03/2024	12/03/2024	1035	8/03/2024	5 - 8	7.956	1.257	Shallow	6.656	8.61	7.353	Good	1.62	12991	7.25	37.9	232.4	29.5	Clear	Clear	No odour	No sheen	HydraSleeve™
MW139	5/03/2024	12/03/2024	958	8/03/2024	2.8 - 5.8	5.798	0.902	Shallow	4.498	6.53	5.628	Good	0.64	5903	6.84	21.6	215.4	30.2	Clear	Clear	No odour	No sheen	HydraSleeve™
Former B Squadron																							
MW135	5/03/2024	12/03/2024	1101	7/03/2024	3 - 6	6.38	3.109	Shallow	5.080	14.96	11.851	Good	2.58	1215	6.67	13.0	205.1	31.9	Clear	Clear	No odour	No sheen	HydraSleeve™
Former Fire Station																							
MW105	5/03/2024	12/03/2024	1310	7/03/2024	3 - 6	6.365	1.455	Shallow	5.065	17.166	15.711	Good	0.7	4320	7.15	34.5	228.9	29.6	Medium	Light Brown	No odour	No sheen	HydraSleeve™
MW128	5/03/2024	12/03/2024	1305	7/03/2024	2.6 - 5.6	5.597	1.702	Shallow	4.297	17.556	15.854	Good	0.82	2215	7.45	31.1	226.0	29.1	Clear	Clear	No odour	No sheen	HydraSleeve™
Former Fire Training Area																							
MW131	5/03/2024	12/03/2024	1128	7/03/2024	5.4 - 8.4	8.715	2.628	Shallow	7.415	25.146	22.518	Good	1.02	555	6.92	51.0	246.9	28.1	Clear	Clear	No odour	No sheen	HydraSleeve™
Former Helicopter Squadron																							
MW102	5/03/2024	12/03/2024	1413	7/03/2024	8.5 - 14.5	9.810	3.094	Shallow	8.510	22.87	19.776	Good	0.72	587	7.5	39.0	233.8	29.2	Clear	Clear	No odour	No sheen	HydraSleeve™
Lavarack Golf Course & Sporting Field																							
MW065	5/03/2024	12/03/2024	1430	8/03/2024	1.5 - 6	6.500	1.019	Shallow	5.200	13.42	12.401	Good	0.54	1059	7.36	19.2	213.5	29.7	Clear	Clear	No odour	No sheen	HydraSleeve™
MW120	5/03/2024	12/03/2024	1410	8/03/2024	4 - 7	7.520	2.296	Shallow	6.220	13.32	11.024	Good	0.99	1547	7.22	23.5	219.3	28.2	Clear	Clear	No odour	No sheen	HydraSleeve™
MW121	5/03/2024	12/03/2024	1350	8/03/2024	2.5 - 5.8	6.412	2.015	Shallow	5.112	13.67	11.655	Good	1.01	6815	7.38	30.3	225.9	28.4	Clear	Clear	No odour	No sheen	HydraSleeve™
MW122	5/03/2024	12/03/2024	1233	8/03/2024	9.3 - 16.3	17.265	3.986	Deep	15.965	14.44	10.454	Good	1.85	197.9	6.85	17.3	213.7	27.6	Clear	Clear	No odour	No sheen	HydraSleeve™
MW123I	5/03/2024	12/03/2024	1448	8/03/2024	5.8 - 8.8	10.100	2.746	Deep	8.800	14.04	11.294	Good	1.13	26471	6.79	26.9	223.1	27.8	Clear	Clear	No odour	No sheen	HydraSleeve™
MW123S	5/03/2024	12/03/2024	1435	8/03/2024	1 - 5	5.421	0.962	Shallow	4.121	13.48	12.518	Good	0.65	2272	7.28	15.1	210.9	28.2	Turbid	Clear	No odour	No sheen	HydraSleeve™
Monocell																							
MW072	5/03/2024	12/03/2024	1138	7/03/2024	Not available in ESdat	7.908	4.072	Shallow	6.608	25.41	21.338	Good	0.84	1842	6.9	42.2	235.9	30.3	Clear	Clear	No odour	No sheen	HydraSleeve™
MW074	5/03/2024	12/03/2024	1150	7/03/2024	Not available in ESdat	7.145	3.113	Shallow	5.845	23.28	20.167	Good	0.69	2194	7.07	59.1	251.5	31.6	Clear	Clear	No odour	No sheen	HydraSleeve™
MW106	5/03/2024	12/03/2024	1155	7/03/2024	2.5 - 8.5	10.176	3.942	Deep	8.876	23.822	19.88	Good	4.4	2164	7.12	55.0	250.4	28.6	Clear	Clear	No odour	No sheen	HydraSleeve™
Former B Squadron																							
MW141	5/03/2024	12/03/2024	1115	7/03/2024	Not available in ESdat	8.825	1.542	Shallow	7.525	28.19	26.648	Good	0.84	1468	6.72	45.3	240.1	29.2	Clear	Clear	No odour	No sheen	HydraSleeve™
Suspected AFFF Disposal Area																							
MW101	5/03/2024	12/03/2024	1420	7/03/2024	5 - 9	4.153	2.653	Shallow	2.853	21.23	18.577	Good	0.88	284	6.44	41.4	236.2	29.2	Clear	Clear	No odour	No sheen	HydraSleeve™
Former Fire Station																							
MW138	5/03/2024	12/03/2024	1330	7/03/2024	6 - 9	9.105	2.845	Shallow	7.805	16.49	13.645	Good	0.71	3384	6.92	38.2	233.7	28.5	Clear	Clear	No odour	No sheen	HydraSleeve™
Base Boundary																							
MW002	5/03/2024	12/03/2024	1031	8/03/2024	Not available in ESdat	5.261	2.164	Shallow	3.961	11.35	9.186	Good	1.13	565	7	23.0	217.5	29.5	Clear	Clear	No odour	No sheen	HydraSleeve™
MW003	5/03/2024	12/03/2024	1348	8/03/2024	Not available in ESdat	30.600	3.276	Deep	29.300	14.108	10.832	Good	1.65	7690	7.3	27.6	223.4	28.2	Low	Clear	No odour	No sheen	HydraSleeve™
MW118	5/03/2024	12/03/2024	1445	8/03/2024	3 - 6	6.070	1.181	Shallow	4.770	10.54	9.359	Good	2.69	5242	7.34	88.7	279.9	32.8	Clear	Clear	No odour	No sheen	HydraSleeve™
MW119	5/03/2024	12/03/2024	1515	7/03/2024	5.4 - 10.4	10.394	3.301	Deep	9.094	18.78	15.479	Good	2.64	4379	7.16	30.0	225.0	29	Clear	Clear	No odour	No sheen	HydraSleeve™
MW124	5/03/2024	12/03/2024	1320	8/03/2024	3 - 6	7.855	2.249	Shallow	6.555	14.41	12.161	Good	0.98	20714	6.85	23.9	219.0	28.9	Clear	Light Brown	No odour	No sheen	HydraSleeve™
MW125I	5/03/2024	12/03/2024	1309	8/03/2024	14.2 - 20.2	21.922	4	Deep	20.622	16.67	12.67	Good	0.82	6070	6.98	31.7	227.6	28.1	Clear	Clear	No odour	No sheen	HydraSleeve™
MW125S	5/03/2024	12/03/2024	1307	8/03/2024	3.8 - 6.8	7.740	3.308	Shallow	6.440	16.68	13.372	Good	3.04	4018	7.1	24.6	220.4	28.2	Clear	Clear	No odour	No sheen	HydraSleeve™
Off-Base																							
MW205S	5/03/2024	12/03/2024	1041	7/03/2024	8 - 11	8.836	4.933	Shallow	7.536	6.4	1.467	Good	0.74	27580	6.8	68.7	264.0	28.7	Low	Clear	No odour	No sheen	HydraSleeve™
MW212	5/03/2024	12/03/2024	943	7/03/2024	6 - 9	8.865	1.419	Shallow	7.565	8.31	6.891	Good	5.79	6239	7.05	62.8	257.8	29	Low	Light Yellow	Slight organic	No sheen	HydraSleeve™
MW217	5/03/2024	12/03/2024	911	7/03/2024	3 - 6	5.221	0.590	Shallow	3.921	7.35	6.76	Good	0.61	5181	6.48	15.0	209.2	29.8	Medium	Light Brown	Sulfuric odour	No sheen	HydraSleeve™
MW220S	5/03/2024	12/03/2024	1058	7/03/2024	2 - 5	6.028	1.233	Shallow	4.728	3.75	2.517	Good	0.86	38503	6.35	55.8	251.4	28.4	Low	Clear	Sulfuric odour	No sheen	HydraSleeve™
MW226	5/03/2024	12/03/2024	742	8/03/2024	Not available in ESdat	5.780	0.285	Shallow	4.480	Not available in ESdat	-	Good	0.75	10387	6.92	-1.3	194.9	27.8	Low	Brown	Organic odour	No sheen	HydraSleeve™
MW232	5/03/2024	12/03/2024	1131	7/03/2024	1 - 4	3.797	0.309	Shallow	2.497	2.31	2.001	Good	0.5	41687	6.25	78.4	272.7	29.7	Low	Clear	No odour	No sheen	HydraSleeve™
MW233	5/03/2024	12/03/2024	954	7/03/2024	4.2 - 7.2	7.535	0.586	Shallow	6.235	6.87	6.284	Good	0.83	6173	6.97	65.1	261.1	28	Low	Clear	Slight organic	No sheen	HydraSleeve™
MW235S	5/03/2024	12/03/2024	1005	7/03/2024	4.1 - 8.1	8.093	4.982	Shallow	6.793	7.08	2.098	Good	0.75	1802	6.63	28.2	223.5	28.7	Turbid	Light Brown	Slight organic	No sheen	HydraSleeve™
MW236S	5/03/2024	12/03/2024	1020	7/03/2024	4 - 7	6.927	4.446	Shallow	5.627	6.53	2.084	Good	1.25	1193	6.46	55.4	250.1	29.3	Medium	Light Brown	Slight organic	No sheen	HydraSleeve™

mbtoc - metres below top of casing
TOC - top of casing
mAHD - metres above Australian Height Datum
DO - Dissolved Oxygen
EC - Electrical Conductivity
Redox - Redox Oxidation Potential
Temp - Temperature
mg/L - milligrams per litre

µS/cm - microsiemens per centimetre
°C - degrees Celsius
"-" denotes no analysis recorded
mV - millivolt
* Depth at which collar of the HydraSleeve was installed. Length of HydraSleeve = 1.3 m

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Table T2: Groundwater PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

			PFAS Full Suite																														
			4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoropentanoic acid (PFPeA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic Acid (PFOA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFOS + PFHxS	Sum of PFAS
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR		0.05	0.05	0.05	0.05	0.05	0.02	0.05	0.02	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.01	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.05	0.02	0.02	0.01	0.01
PFAS NEMP 2020 Drinking Water (HEPA, 2020)																								**0.56**								**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																		***0.13***						***220***									
Location	**Sample ID**	**Sampled Date**																															
Eastern PFAS Contamination Area																																	
MW018	0229_MW018_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.48	0.43	2.68	0.2	***5.97***	<0.02	<0.1	0.7	0.12	0.1	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**8.65**	10.9
MW114	0229_MW114_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	3.03	2.84	17.8	0.98	***3.88***	<0.02	0.4	5.83	0.97	0.96	**1.47**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**21.7**	38.2
MW115	0229_MW115_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.08	0.3	<0.02	0.12	<0.02	<0.1	0.09	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.42**	0.75
MW116	0229_MW116_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.22	0.07	0.21	<0.02	0.02	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.23**	0.57
MW139	0229_MW139_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.04	0.53	0.02	***1.39***	<0.02	<0.1	0.03	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.92**	2.09
Former B Squadron																																	
MW135	0229_MW135_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.12	2.29	0.28	***12.7***	<0.02	<0.1	0.28	0.04	0.04	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**15**	16.1
Former Fire Station																																	
MW105	0229_MW105_240307	7/03/2024	<0.05	0.22	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	4.98	5.6	39.8	1.72	***27***	<0.02	0.5	10.1	1.81	1.16	**1.92**	<0.02	<0.02	0.21	<0.05	<0.02	<0.02	**66.8**	95
MW128	0229_MW128_240307	7/03/2024	<0.35	<0.35	1.13	<0.35	<0.87	<0.35	<0.87	3.22	<0.87	<0.35	<0.87	31.3	34.2	336	29.3	***763***	0.56	2.1	72.1	14.2	9.17	**27.1**	<0.35	<0.35	2.23	<0.87	<0.35	<0.35	**1100**	1320
Former Fire Training Area																																	
MW131	0229_MW131_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	1.59	1.14	5.95	0.32	***3.69***	<0.02	0.3	1.89	0.52	0.37	**0.69**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**9.64**	16.5
Former Helicopter Squadron																																	
MW102	0229_MW102_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.06	<0.02	0.1	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.16**	0.16
Lavarack Golf Course & Sporting Field																																	
MW065	0229_MW065_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.12	2.02	0.19	***7.54***	<0.02	<0.1	0.42	0.1	0.03	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**9.56**	10.6
MW120	0229_MW120_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.03	<0.02	0.08	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.11**	0.15
MW121	0229_MW121_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.04	0.26	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.33**	0.41
MW122	0229_MW122_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
MW123I	0229_MW123I_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.24	0.14	0.59	<0.02	0.01	<0.02	<0.1	0.08	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.6**	1.06
MW123S	0229_MW123S_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.3	0.2	1.82	0.12	***0.83***	<0.02	<0.1	0.31	0.08	0.05	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.65**	3.8
Monocell																																	
MW072	0229_MW072_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	4.66	4.9	32.1	1.72	***42***	<0.02	0.4	6.15	1.12	0.76	**1.52**	<0.02	<0.02	1.16	<0.05	<0.02	<0.02	**74.1**	96.5
MW074	0229_MW074_240307	7/03/2024	<0.05	0.08	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	4.08	4.5	34.5	2.14	***38.3***	<0.02	0.4	6.51	1.19	0.91	**1.94**	<0.02	<0.02	1.1	<0.05	<0.02	<0.02	**72.8**	95.6
MW106	0229_MW106_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	0.06	<0.02	0.08	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.14**	0.19
Stockpile Designated Area 2																																	
MW141	0229_MW141_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.06	0.52	0.02	***0.28***	<0.02	<0.1	0.1	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.8**	1.09
Suspected AFFF Disposal Area																																	
MW101	0229_MW101_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.01	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.06
Top, Middle and Lower Dams																																	
MW138	0229_MW138_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.93	0.85	5.37	0.44	***7.51***	<0.02	0.1	1.19	0.25	0.19	0.36	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	**12.9**	17.2
Base Boundary																																	
MW002	0229_MW002_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.05	0.89	0.04	***1.87***	<0.02	<0.1	0.08	<0.02	<0.02	0.03	<0.02	<0.02	0.04	<0.05	<0.02	0.02	**2.76**	3.1
MW003	0229_MW003_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW118	0229_MW118_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.07
MW119	0229_MW119_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.34	<0.02	0.05	<0.02	0.04	<0.02	<0.1	0.13	0.16	0.14	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.09**	1
MW124	0229_MW124_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW125I	0229_MW125I_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.04	0.41	<0.02	0.02	<0.02	<0.1	0.09	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.43**	0.67
MW125S	0229_MW125S_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.59	0.43	3.82	0.02	0.04	<0.02	<0.1	0.87	0.17	0.09	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.86**	6.11
Off-Base																																	
MW205S	0229_MW205S_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
MW212	0229_MW212_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW217	0229_MW217_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW220S	0229_MW220S_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.05	0.28	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.3**	0.46
MW226	0229_MW226_240308	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.02	0.06	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	0.13
MW232	0229_MW232_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	<0.02	0.06	<0.02	0.1	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.16**	0.28
MW233	0229_MW233_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW235S	0229_MW235S_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.02
MW236S	0229_MW236S_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	<0.02	0.12	<0.02	0.12	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.24**	0.32

LOR is limit of reporting
µg/L is micrograms per litre
# denotes disturbance to the well may have impacted sample integrity
< denotes concentration is less than
PFAS NEMP 2020 Drinking Water guideline applied to off-Base monitoring wells only.
Heads of Environmental Protection Agencies (HEPA). (2020). *PFAS National Environmental Management Plan (NEMP).*

Table T3: Surface Water Quality Parameter Results

Location Code	Sample Date	DO mg/L	EC µS/cm	pH	Redox (mV)	Corrected Redox (mV)	Temp (°C)	Turbidity	Water Colour	Odour	Sheen	Comments
Eastern PFAS Contamination Area												
SW119	4/03/2024	4.17	819	8.17	820	1012.0	32	Low	Light Olive Brown	Slight Organic Odou	No sheen	Concrete drain, low flow, algae observed
SW121	4/03/2024	1.71	813	7.34	63	257.9	29.1	Clear	Clear	No odour	No sheen	Concrete drain, low flow
Former Fire Station												
SW109	4/03/2024	2.61	505	7.51	74.8	269.3	29.5	Low	Clear	No odour	No sheen	Earthen drain, channel full of weeds
SW110	4/03/2024	2.36	856	7.48	90.8	284.8	30	Low	Light Olive Brown	No odour	No sheen	Earthen drain, channel full of weeds
Lavarack Golf Course & Sporting Field												
SW129	4/03/2024	6.03	805	9.19	61.8	248.3	37.5	Low	Clear	No odour	No sheen	Clay lined culvert, low flow
SW130	4/03/2024	6.41	954	9.51	71.5	257.2	38.3	Low	Clear	Organic Odour	No sheen	Clay lined culvert, low flow
Top, Middle and Lower Dams												
SW139	4/03/2024	3.62	325.5	7.55	81.4	273.3	32.1	Low	Light Olive Brown	No odour	No sheen	Side of lake, no flow, high amount of weeds on water surface
SW140	12/03/2024	5.82	297.5	6.53	178.4	372.6	29.8	Clear	Clear	No odour	No sheen	On dam wall, low flow
SW144	4/03/2024	1.35	262.1	6.9	69.8	263.7	30.1	Low	Clear	No odour	No sheen	Side of lake, no flow, high amount of weeds on water surface
Base Boundary												
SW126	4/03/2024	3.55	134.2	7.5	56.9	249.7	31.2	Medium	Clear	No odour	No sheen	Clay lined culvert, low flow
SW128	4/03/2024	4.81	503	8.36	70.6	259.4	35.2	Low	Clear	No odour	No sheen	Clay lined culvert, low flow
SW132	4/03/2024	2.52	292.6	7.21	80.9	273.0	31.9	Low	Clear	Organic Odour	No sheen	Under bridge, low flow, high amount of weeds on water surface
SW133	5/03/2024	7.27	27.6	7.02	150.4	347.4	27	Clear	Clear	No odour	No sheen	Drain, 1m wide, low flow
SW134	4/03/2024	3.13	220.3	7.25	82	268.6	37.4	Low	Clear	Organic Odour	No sheen	Drain, 1m wide, low flow
SW135	4/03/2024	7.02	345.9	7.65	87.7	279.8	31.9	Clear	Yellowish Red	No odour	No sheen	Drainage channel, low flow, 2m wide
SW136	4/03/2024	4.48	511	7.96	75.8	268.0	31.8	Low	Clear	No odour	No sheen	Clay lined culvert, low flow
Remaining On-Base												
SW113	4/03/2024	4.64	259.6	7.63	91.1	282.6	32.5	Low	Clear	Slight Organic Odou	No sheen	Creek bed, low flow
SW120	4/03/2024	4.18	326.8	8.09	72.7	265.2	31.5	Low	Clear	No odour	No sheen	Creek bed, low flow
Off-Base												
SW203	4/03/2024	6.82	682	7.41	88.6	279.8	32.8	Low	Pale Yellow	No odour	No sheen	Creek, 2m wide, slow flow
SW205	5/03/2024	No safe access to river, no sample collected										
SW211	7/03/2024	5.85	829	7.42	79.7	275.9	27.8	Clear	Pale yellow	Sulfurous Odour	No sheen	Drainage creek, 1 m wide, low flow
SW212	7/03/2024	2.44	1497	7.27	79	272.9	30.1	Clear	Clear	No odour	No sheen	Concrete drain, 3m wide, low flow
SW217	4/03/2024	5.58	373	7.30	81.6	274.0	31.6	Clear	Clear	No odour	Biosheen	Drainage channel, 1m wide, low flow
SW220	4/03/2024	5.96	641	7.67	73.7	263.6	34.1	Clear	Clear	No odour	No sheen	Drainage channel, 5m wide, slow flow
SW227	7/03/2024	8.19	265.8	6.94	138.3	332.4	29.9	Low	Light brown	No odour	No sheen	Under bridge, moderate flow, high amount of weeds present
SW232	4/03/2024	7.3	3252	7.88	93	283.3	33.7	Turbid	Light Olive Brown	No odour	No sheen	Creek, 3 m wide, moderate flow
SW233	4/03/2024	5.1	441.2	7.13	98.8	292.6	30.2	Low	Dark Reddish Brown	No odour	No sheen	Creek, 2m wide, low flow
SW242	4/03/2024	7.64	1940	8.03	65.3	254.5	34.8	Turbid	Light Olive Brown	No odour	Biosheen	Edge of lake, 200m wide, high flow
SW243	4/03/2024	7.93	10093	7.87	197	387.5	33.5	Medium	Light Olive Brown	No odour	No sheen	Edge of lake, 15m wide, moderate flow
SW244	7/03/2024	8.17	212.3	7.48	116	309.3	30.7	Low	Light brown	No odour	No sheen	Slow flow just above weir
SW245	7/03/2024	5.93	212.6	6.56	166.6	361.6	29	Low	Light brown	No odour	No sheen	Slow flow just above weir

AECOM

Table T4: Surface Water PFAS
Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

Location	Sample ID	Sampled Date	PFAS Full Suite																													
			4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoropentanoic acid (PFPeA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic Acid (PFOA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFOS + PFHxS	Sum of PFAS
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR		0.05	0.05	0.05	0.05	0.05	0.02	0.05	0.02	0.05	0.02	0.05	0.02	0.02	0.02	0.02	0.01	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.01	0.01
NHMRC (2019) PFAS Recreational Water																								**10**							**2**	
PFAS NEMP 2020 Drinking Water* (HEPA, 2020)																								*0.56*							*0.07*	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																		***0.13***						***220***								
Eastern PFAS Contamination Area																																
SW119	0229_SW119_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.07	0.41	0.02	***0.42***	<0.02	<0.1	0.13	0.03	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.83*	1.25
SW121	0229_SW121_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.05	0.34	<0.02	***0.36***	<0.02	<0.1	0.08	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.70*	0.93
Former Fire Station																																
SW109	0229_SW109_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	0.09	<0.05	<0.02	<0.05	1.96	2.59	19.4	1.63	***32.40***	0.02	0.4	4.84	0.96	0.61	*1.47*	<0.02	<0.02	0.1	<0.05	<0.02	<0.02	**51.80**	66.5
SW110	0229_SW110_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	0.04	<0.05	<0.02	<0.05	1.57	2.15	16.2	1.39	***28.30***	0.02	0.3	3.67	0.74	0.47	*1.24*	<0.02	<0.02	0.08	<0.05	<0.02	<0.02	**44.50**	56.2
Top, Middle and Lower Dams																																
SW139	0229_SW139_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.13	<0.02	***0.18***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.31*	0.37
SW140	0229_SW140_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.11	<0.02	***0.19***	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.30*	0.35
SW144	0229_SW144_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.09	<0.02	***0.13***	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.22*	0.28
Base Boundary																																
SW126	0229_SW126_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW128	0229_SW128_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.06	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.13*	0.16
SW132	0229_SW132_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.13	<0.02	***0.23***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.36*	0.42
SW133	0229_SW133_240305	5/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW134	0229_SW134_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW135	0229_SW135_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.12	<0.02	0.09	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.21*	0.24
SW136	0229_SW136_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.14	<0.02	***0.28***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.42*	0.48
Remaining On-Base																																
SW113	0229_SW113_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.05	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.10*	0.1
SW120	0229_SW120_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.1	<0.02	0.07	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.17*	0.22
Lavarack Golf Course and Sporting Fields																																
SW129	0229_SW129_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	0.18	<0.02	0.11	<0.02	<0.1	0.06	0.08	0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.29*	0.55
SW130	0229_SW130_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.06	0.4	<0.02	***0.40***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.80*	1.04
Off-Base																																
SW203	0229_SW203_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.14	<0.02	***0.20***	<0.02	<0.1	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.34*	0.41
SW211	0229_SW211_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.06	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.09*	0.11
SW212	0229_SW212_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	0.07
SW217	0229_SW217_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
SW220	0229_SW220_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.19	<0.02	***0.18***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.37*	0.44
SW227	0229_SW227_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW232	0229_SW232_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.05	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.10*	0.1
SW233	0229_SW233_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.03	0.23	<0.02	***0.33***	<0.02	<0.1	0.04	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.56*	0.69
SW242	0229_SW242_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.05	<0.02	0.12	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.17*	0.19
SW243	0229_SW243_240304	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
SW244	0229_SW244_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW245	0229_SW245_240307	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01

NS - No Sample - Surface water not present
LOR is limit of reporting
µg/L is micrograms per litre
< denotes concentration is less than

Heads of Environmental Protection Agencies (HEPA). (2020). *PFAS National Environmental Management Plan (NEMP)*.
National Health and Medical Research Council (NHMRC). (2019). *Guidance on PFAS in Recreational Water.* August 2019 (NHMRC 2019).

*PFAS NEMP 2020 Drinking Water is used for SW245 only. This is the only sample location upstream of Blacks Weir in the Ross River, the backup drinking water source for the city of Townsville.

Table T5: Sediment Observation Results

Location ID	Date	Sample Description	Odour	Comment
Eastern PFAS Contamination Area				
SD119	4/03/2024	gravelly SAND, loose, light brown, fine-medium grained, medium gravel, saturated	Organic	
SD121	4/03/2024	gravelly SAND, loose, dark brown, medium grained, fine-medium gravel, saturated	N	
Former Fire Station				
SD109	4/03/2024	gravelly SAND, loose, light brown, fine grained, fine gravel, saturated	N	
SD110	4/03/2024	sandy CLAY, dense, dark brown, medium plasticity, fine grained sand, saturated	N	
Lavarack Golf Course & Sporting Field				
SD129	4/03/2024	gravelly SAND, loose, light brown, fine-medium grained, fine gravel, saturated	N	
SD130	4/03/2024	sandy CLAY, dense, dark brown, high plasticity, fine grained sand, saturated	Organic	
Top, Middle and Lower Dams				
SD139	4/03/2024	gravelly CLAY, dense, dark brown, high plasticity, medium gravels, saturated	N	
SD140	4/03/2024	sandy CLAY, dense, dark brown, high plasticity, fine sand, saturated	Organic	
SD144	4/03/2024	sandy CLAY, dense, dark brown, medium plasticity, fine sand, saturated	N	
Remaining On-Base				
SD113	4/03/2024	gravelly SAND, loose, light brown, fine to medium grained, fine to medium gravels, saturated	Organic	
SD120	4/03/2024	gravelly SAND, loose, light brown, fine to medium grained, fine to medium gravel, saturated	N	
Base Boundary				
SD126	4/03/2024	gravelly SAND, dense, light to dark brown, fine grained sand, fine gravel, saturated	N	
SD128	4/03/2024	gravelly CLAY, dense, high plasticity, fine gravel, saturated	N	
SD132	4/03/2024	gravelly SAND, loose, light brown, coarse gravel, fine - medium sand, saturated	Organic	
SD133	4/03/2024	gravelly SAND, firm, dark grey, angular, coarse sand, fine to coarse gravel, moist	N	Grass and root matter
SD134	4/03/2024	gravelly SAND, dark brown, medium density, fine gravels, medium sand, saturated	Organic	
SD135	4/03/2024	gravelly SAND, loose, brown/orange, med coarse sand, fine to medium gravel, angular, saturated	N	
SD136	4/03/2024	gravelly SAND, loose, light brown, fine to medium grained, fine gravel, moist	N	
Off-Base				
SD203	4/03/2024	SAND, loose, pale brown, medium to coarse grained sand, saturated	N	
SD205	4/03/2024	No safe access to river, no sample collected		
SD211	7/03/2024	clayey SAND, loose, light brown, fine to coarse grained, medium plasticity, wet	N	
SD212	7/03/2024	gravelly SAND, loose, light brown, fine to coarse grained, medium plasticity, wet	N	
SD217	4/03/2024	sandy CLAY, firm, brown, low plasticity, saturated	N	
SD220	4/03/2024	silty sandy CLAY, firm, dark grey and brown, low plasticity, saturated	N	Grass and reeds
SD227	7/03/2024	silty SAND, loose, dark brown, fine to coarse grained, saturated	N	
SD232	4/03/2024	silty CLAY, soft, dark grey, low plasticity, saturated	N	
SD233	4/03/2024	clayey SAND, firm, medium to fine grained sand, saturated	N	Tree roots
SD242	4/03/2024	silty gravelly CLAY, soft, dark grey, low plasticity, saturated	Sulfuric	Grass and reeds
SD243	4/03/2024	silty CLAY, soft, dark grey, low plasticity, saturated	N	
SD244	7/03/2024	silty SAND, loose, brown, fine to medium grained sand, saturated	N	
SD245	7/03/2024	SILT, very soft, brown, saturated	Organic	

AECOM

Table T6: Sediment PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

			PFAS Full Suite																																
			4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoropentanoic acid (PFPeA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic Acid (PFOA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFOS + PFHxS	Sum of PFAS
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR			0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002
Location	**Sample ID**	**Sampled Date**																																	
Eastern PFAS Contamination Area																																			
SD119	0229_SD119_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0011	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014	0.0014
SD121	0229_SD121_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	<0.0002	0.0032	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0038	0.0038
Former Fire Station																																			
SD109	0229_SD109_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.0012	<0.0005	<0.0002	<0.0005	0.0008	0.0008	0.0095	0.0009	0.05	0.0006	<0.001	0.0019	0.0003	0.0003	0.0008	<0.0002	<0.0002	<0.0002	<0.0005	0.0003	<0.0002	0.0595	0.0674
SD110	0229_SD110_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0015	<0.0002	0.0245	0.0012	<0.001	0.0004	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0003	0.0002	0.026	0.0283
Lavarack Golf Course & Sporting Field																																			
SD129	0229_SD129_240304	8/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0006
SD130	0229_SD130_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	<0.0002	0.0047	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0053	0.0056
SD133	0229_SD133_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
SD134	0229_SD134_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Top Middle and Lower Dams																																			
SD139	0229_SD139_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0007	0.0009	0.0182	0.0055	0.148	0.0004	<0.001	0.0011	0.0002	0.0003	0.0017	0.0002	<0.0002	0.0003	<0.0005	<0.0002	<0.0002	0.166	0.178
SD140	0229_SD140_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0018	<0.0002	0.009	0.0002	<0.001	0.0004	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0108	0.0116
SD144	0229_SD144_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0005	<0.0002	0.0023	0.0003	0.0393	0.0003	<0.001	0.0004	0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0416	0.0436
Base Boundary																																			
SD126	0229_SD126_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0006
SD128	0229_SD128_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	<0.0002	0.0141	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0145	0.0145
SD132	0229_SD132_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0019	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0019	0.0019
SD135	0229_SD135_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.001	0.001
SD136	0229_SD136_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
Remaining On-Base																																			
SD113	0229_SD113_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	0.0008
SD120	0229_SD120_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009
Off-Base																																			
SD203	0229_SD203_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
SD211	0229_SD211_240307	7/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	0.001
SD212	0229_SD212_240307	7/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD217	0229_SD217_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	<0.0002	0.0027	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0032	0.0042
SD220	0229_SD220_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0003	0.0002	0.0061	0.0002	0.005	<0.0002	<0.001	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0111	0.0122
SD227	0229_SD227_240307	7/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD232	0229_SD232_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	0.0008
SD233	0229_SD233_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	0.0002	0.004	0.0002	0.0163	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0203	0.0209
SD242	0229_SD242_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0047	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0047	0.0047
SD243	0229_SD243_240304	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD244	0229_SD244_240307	7/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD245	0229_SD245_240307	7/03/2024	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005

NS - No Sample - Sediment not present
LOR is limit of reporting
mg/kg is milligrams per kilogram
< denotes concentration is less than

AECOM

Table T7: Historical Groundwater PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

Location ID	Sample Date	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)															***0.13***		***220***														
Eastern PFAS Contamination Area																															
MW018	12/09/2017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	1.27	2.16	**12.3**	0.87	***30.4***	<0.02	0.5	4.75	0.8	1	**1.01**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**42.7**	55.06
	30/08/2018	<0.01	0.012	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.4	1.2	**8.1**	0.46	***13***	<0.01	0.33	2.3	0.45	0.3	0.46	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**21.1**	28.012
	30/08/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.4	1.1	**7.9**	0.38	***15***	<0.01	1.4	5.8	1.2	0.33	**0.59**	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**22.9**	35.1
	17/05/2019	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	5.03	4.84	**25.3**	0.91	***23.6***	<0.05	0.4	9.92	1.46	0.96	**1.38**	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	**48.9**	73.8
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.17	0.14	**0.99**	0.044	***2***	<0.01	<0.05	0.31	0.056	0.036	0.057	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**2.99**	3.803
	4/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.11	0.096	**0.58**	0.028	***1***	<0.01	<0.05	0.18	0.034	0.023	0.037	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**1.58**	2.088
	28/10/2020	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	2.97	2.79	**15.3**	1.11	***22.1***	<0.10	0.8	5.61	1.09	0.78	**1.12**	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	**37.4**	53.67
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.09	<0.04	<0.09	<0.04	<0.09	<0.04	<0.09	2.22	2.19	**13.8**	0.78	***22.8***	<0.04	0.4	4.23	0.72	0.44	**0.87**	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	**36.6**	48.45
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.44	0.46	**2.66**	0.16	***4.69***	<0.02	<0.1	0.9	0.15	0.11	0.19	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**7.35**	9.76
	4/03/2022	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	3.68	3.98	**26.5**	1.78	***47.9***	<0.05	0.4	6.86	0.73	0.92	**1.88**	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	**74.4**	94.6
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.14	**0.9**	0.07	***2.24***	<0.02	<0.1	0.24	0.04	0.04	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.14**	3.9
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	6.23	5.46	**26**	1.78	***38.4***	<0.05	1	9.89	1.82	1.02	**1.86**	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	**64.4**	93.5
	23/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.08	**0.67**	0.04	***1.47***	<0.02	<0.2	0.2	0.02	0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.14**	2.66
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.48	0.43	**2.68**	0.2	***5.97***	<0.02	<0.1	0.7	0.12	0.1	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**8.65**	10.9
MW114	18/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.93	0.78	**5.1**	0.2	***0.38***	<0.01	0.4	1.9	0.48	0.38	0.45	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**5.48**	11
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.10	<0.04	<0.10	<0.04	<0.10	<0.04	<0.10	0.92	0.94	**5.29**	0.21	***0.48***	<0.04	0.3	2.2	0.4	0.33	0.39	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	**5.77**	11.46
	31/03/2021	<0.08	<0.08	<0.08	<0.08	<0.21	<0.08	<0.21	<0.08	<0.21	<0.08	<0.21	2.58	2.8	**15.2**	0.75	***2.15***	<0.08	0.7	5.68	1.01	0.92	**1.32**	<0.08	<0.08	<0.08	<0.21	<0.08	<0.08	**17.35**	33.11
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.5	0.56	**2.57**	0.1	***0.21***	<0.02	0.2	1.18	0.22	0.17	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.78**	5.91
	4/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	1.38	1.34	**6.9**	0.42	***0.91***	<0.02	0.3	2.71	0.45	0.44	**0.67**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**7.81**	15.5
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	2.12	2.36	**12.6**	0.7	***2.09***	<0.02	0.3	4.57	0.78	0.73	**1.07**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**14.7**	27.3
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	4.24	4.09	**21.9**	1.56	***4.19***	<0.02	1	8.01	1.46	1.26	**2.02**	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	**26.1**	49.7
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	3.14	3.57	**18**	0.82	***3.97***	<0.02	1.2	7.72	1.61	1.49	**2.39**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**22**	43.9
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	3.03	2.84	**17.8**	0.98	***3.88***	<0.02	0.4	5.83	0.97	0.96	**1.47**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**21.7**	38.2
MW115	12/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.062	0.073	**1**	0.024	***0.52***	<0.01	<0.05	0.1	<0.02	<0.01	0.038	<0.01	<0.01	0.039	<0.02	<0.02	<0.01	**1.52**	1.856
	13/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.062	0.095	**1**	0.029	***0.57***	<0.01	<0.05	0.073	<0.02	<0.01	0.024	<0.01	<0.01	0.049	<0.02	<0.02	<0.01	**1.57**	1.902
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.34	0.096	**0.51**	<0.01	***0.85***	<0.01	0.082	0.22	0.062	<0.01	0.015	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**1.36**	2.175
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.28	0.12	**0.77**	0.017	***0.81***	<0.01	0.06	0.17	0.043	<0.01	0.019	<0.01	<0.01	0.021	<0.02	<0.02	<0.01	**1.58**	2.31
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.44	0.12	**0.54**	0.02	***0.55***	<0.02	<1.10	0.26	<0.10	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.09**	1.95
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.28	0.12	**0.32**	<0.02	***0.46***	<0.02	<0.2	0.16	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.78**	1.37
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.19	0.07	**0.27**	<0.02	***0.34***	<0.02	<0.1	0.13	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.61**	1.02
	4/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	0.09	**0.36**	<0.02	***0.2***	<0.02	<0.1	0.14	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.56**	0.94
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.04	**0.16**	<0.02	**0.1**	<0.02	<0.1	0.07	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.26**	0.47
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	0.08	**0.34**	<0.02	***0.16***	<0.02	<0.1	0.12	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.5**	0.85
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.07	**0.42**	<0.02	***0.14***	<0.02	<0.1	0.14	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.56**	0.91
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.08	**0.3**	<0.02	0.12	<0.02	<0.1	0.09	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.42**	0.75
MW116	13/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.017	<0.01	0.017	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.017	0.034
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	<0.01	0.027	<0.01	<0.02	<0.01	<0.05	0.021	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.027	0.072
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.023	0.011	0.029	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.029	0.063
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.01	0.03	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.06
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	0.07	<0.02	**0.01**	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.08**	0.2
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	0.07	<0.02	<0.01	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	0.17
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.05	**0.12**	<0.02	0.01	<0.02	<0.1	0.05	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.13**	0.36
	4/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.04	**0.11**	<0.02	0.02	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.13**	0.32
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.03	**0.1**	<0.02	<0.01	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.1**	0.26
	10/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.04	**0.11**	<0.02	<0.01	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.11**	0.33
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	0.03	**0.16**	<0.02	0.02	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.18**	0.41
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.22	0.07	**0.21**	<0.02	0.02	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.23**	0.57
MW139	12/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.13	0.14	**1.6**	0.048	***2.7***	<0.01	0.063	0.14	0.028	0.018	0.042	<0.01	<0.01	0.014	<0.02	<0.02	<0.01	**4.3**	4.923
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.12	0.13	**1.5**	0.038	***2.1***	<0.01	0.062	0.12	0.024	0.016	0.038	<0.01	<0.01	0.011	<0.02	<0.02	<0.01	**3.6**	4.159
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.097	0.12	**1.5**	0.047	***2.2***	<0.01	0.055	0.13	0.023	0.014	0.034	<0.01	<0.01	0.014	<0.02	<0.02	<0.01	**3.7**	4.234
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.092	0.12	**1.2**	0.045	***1.7***	<0.01	0.055	0.12	0.023	0.014	0.037	<0.01	<0.01	0.011	<0.02	<0.02	<0.01	**2.9**	3.417
	5/12/2019	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.11	0.14	**1.3**	0.06	***1.9***	<0.01	0.06	0.14	0.03	0.02	0.04	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	**3.2**	3.81
	28/10/2020	<0.05	0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.13	**1.32**	0.06	***2.04***	<0.02	<0.1	0.12	0.03	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.36**	3.89
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.14	**1.47**	0.07	***2.85***	<0.02	<0.1	0.12	0.03	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**4.32**	4.83
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.15	**1.34**	0.07	***2.13***	<0.02	<0.1	0.12	0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.47**	3.98
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.12	**1.23**	0.06	***2.32***	<0.02	<0.1	0.08	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.55**	3.95
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.1	**0.96**	0.04	***1.7***	<0.02	<0.1	0.07	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.66**	2.98
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.11	**1.04**	0.05	***1.93***	<0.02	<0.1	0.08	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.97**	3.36
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.11	**1.1**	0.05	***2.15***	<0.02	<0.1	0.08	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.25**	3.62
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.04	**0.53**	0.02	***1.39***	<0.02	<0.1	0.03	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.92**	2.09
Former B Squadron																															
MW135	10/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.28	0.19	**1.7**	0.055	***1.8***	<0.01	0.2	0.72	0.15	0.041	0.092	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**3.5**	5.228
	10/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.31	0.23	**1.8**	0.068	***2***	<0.01	0.081	0.19	0.062	0.043	0.092	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**3.8**	4.876
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.21	0.2	**5.5**	0.26	***3.9***	<0.01	0.086	0.38	0.049	0.078	0.19	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**9.4**	10.853
	4/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.16	0.16	**2**	0.13	***2.6***	<0.01	0.068	0.21	0.028	0.028	0.12	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**4.6**	5.504
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.13	**1.73**	0.13	***2.37***	<0.02	<0.10	0.11	<0.10	0.02	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**4.1**	4.69
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.09	<0.04	<0.09	<0.04	<0.09	<0.04	<0.09	0.53	0.73	**14**	0.75	***9.54***	<0.04	<0.2	1.04	0.13	0.13	0.34	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	**23.54**	27.19
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.14	**1.7**	0.11	***2.41***	<0.02	<0.1	0.15	<0.02	0.02	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**4.11**	4.74
	4/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.1	**1.04**	0.09	***1.78***	<0.02	<0.1	0.08	<0.02	<0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.82**	3.25
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.07	**0.63**	0.04	***0.55***	<0.02	<0.1	0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.18**	1.4
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.21	0.2	**2.45**	0.33	***11.8***	<0.02	<0.1	0.27	0.05	0.03	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**14.2**	15.5
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.07	**0.51**	0.03	***0.42***	<0.02	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.93**	1.11
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.12	**2.29**	0.28	***12.7***	<0.02	<0.1	0.28	0.04	0.04	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**15**	16.1

AECOM

Table T7: Historical Groundwater
PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

Location ID	Sample Date	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)															***0.13***								***220***								
Former Fire Station																															
MW105	17/07/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.15	0.12	**1.3**	0.04	***0.83***	<0.01	0.052	0.48	0.087	0.022	0.053	<0.01	<0.01	0.021	<0.02	<0.02	0.017	**2.13**	3.172
	31/08/2018	0.016	0.46	0.039	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	7.6	6.7	**55**	1.5	***21***	<0.01	1.3	17	2.8	1.4	**2.4**	<0.01	<0.01	0.21	<0.02	<0.02	0.012	**76**	117.437
	12/07/2019	0.01	0.36	0.056	<0.01	<0.02	<0.01	<0.05	0.013	<0.02	<0.01	<0.05	6	4.9	**49**	1.2	***26***	<0.01	0.85	11	1.9	1.1	**1.6**	<0.01	<0.01	0.16	<0.02	<0.02	0.017	**75**	104.166
	3/12/2019	<0.01	0.3	0.039	<0.01	<0.02	<0.01	<0.05	0.011	<0.02	<0.01	<0.05	4.9	4.7	**42**	0.98	***26***	<0.01	0.91	12	1.7	0.87	**1.6**	<0.01	<0.01	0.13	<0.02	<0.02	0.015	**68**	96.155
	29/10/2020	<0.07	0.24	<0.07	<0.07	<0.17	<0.07	<0.17	<0.07	<0.17	<0.07	<0.17	4.52	5	**37.6**	1.71	***25.8***	<0.07	0.7	11.2	1.78	1.02	**1.65**	<0.07	<0.07	0.11	<0.17	<0.07	<0.07	**63.4**	91.33
	31/03/2021	<0.4	<0.4	<0.4	<0.4	<1	<0.4	<1	<0.4	<1	<0.4	<1	3.76	4.48	**31.3**	1.56	***29.6***	<0.4	<2	9.12	1.6	0.92	**1.64**	<0.4	<0.4	<0.4	<1	<0.4	<0.4	**60.9**	83.98
	18/08/2021	<0.05	0.24	<0.05	<0.05	<0.09	<0.04	<0.09	<0.04	<0.09	<0.04	<0.09	4.13	4.84	**33.4**	1.5	***27.3***	<0.04	0.7	9.94	1.62	0.96	**1.62**	<0.04	<0.04	0.14	<0.09	<0.04	<0.04	**60.7**	86.4
	3/03/2022	<0.05	0.12	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	2.72	3	**20.9**	1.04	***16.9***	<0.05	0.4	5.92	0.58	0.91	**1.03**	<0.05	<0.05	0.08	<0.12	<0.05	<0.05	**37.8**	53.6
	24/08/2022	<0.05	0.2	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	4.16	5.94	**35.4**	1.95	***25.3***	<0.02	0.4	8.5	1.47	1.05	**1.65**	<0.02	<0.02	0.11	<0.05	<0.02	<0.02	**60.7**	86.1
	9/03/2023	<0.05	0.18	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	5.7	5.66	**39.7**	2.14	***28***	<0.05	0.7	11.2	1.91	1.17	**1.8**	<0.05	<0.05	0.17	<0.12	<0.05	<0.05	**67.7**	98.3
	24/08/2023	<0.1	0.4	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	6.77	9.38	**61.6**	2.81	***37.6***	<0.1	0.8	15.6	2.79	1.68	**3.1**	<0.1	<0.1	0.3	<0.25	<0.1	<0.1	**99.2**	143
	7/03/2024	<0.05	0.22	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	4.98	5.6	**39.8**	1.72	***27***	<0.02	0.5	10.1	1.81	1.16	**1.92**	<0.02	<0.02	0.21	<0.05	<0.02	<0.02	**66.8**	95
MW128	18/07/2018	<0.01	0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.43	0.41	**5**	0.42	***22***	<0.01	0.13	0.92	0.22	0.11	0.36	<0.01	<0.01	1.2	<0.02	<0.02	<0.01	**27**	31.21
	31/08/2018	0.038	<0.01	0.089	<0.01	<0.02	<0.01	<0.05	0.5	<0.02	<0.01	<0.05	18	20	**240**	13	***380***	<0.01	8.2	51	14	6.3	**18**	0.22	<0.01	35	<0.02	<0.02	0.16	**620**	804.507
	31/08/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	25	22	**290**	13	***490***	<0.01	31	350	47	9.3	**19**	0.2	<0.01	30	<0.02	<0.02	0.16	**780**	1326.66
	12/07/2019	<0.01	0.44	0.1	<0.01	<0.02	<0.01	<0.05	0.83	<0.02	<0.01	<0.05	24	22	**240**	16	***510***	<0.01	5.3	52	9.5	5.6	**17**	0.34	<0.01	26	<0.02	<0.02	0.69	**750**	929.8
	3/12/2019	0.013	0.62	0.17	<0.01	<0.02	<0.01	<0.05	0.57	<0.02	<0.01	<0.05	38	38	**370**	25	***570***	<0.01	8.3	86	16	10	**27**	0.2	<0.01	17	<0.02	<0.02	0.32	**940**	1207.193
	3/12/2019	0.017	0.61	0.19	<0.01	<0.02	<0.01	<0.05	0.58	<0.02	<0.01	<0.05	35	34	**340**	23	***590***	<0.01	7.5	80	14	10	**23**	0.18	<0.01	15	<0.02	<0.02	0.34	**930**	1173.417
	3/12/2019	0.01	<0.05	0.23	<0.01	<0.01	<0.01	<0.01	0.9	<0.01	<0.01	<0.01	38	41	**360**	32	***490***	<0.01	7.7	87	17	11	**31**	0.2	<0.01	10	<0.01	<0.01	0.36	**850**	1126.4
	29/10/2020	<0.70	<0.70	<0.70	<0.70	<1.75	<0.70	<1.75	<0.70	<1.75	<0.70	<1.75	24.3	28	**248**	21.5	***483***	<0.70	3.8	58.8	10.4	6.58	**17.8**	<0.70	<0.70	17.2	<1.75	<0.70	<0.70	**731**	919.38
	31/03/2021	<2.26	<2.26	<2.26	<2.26	<5.64	<2.26	<5.64	<2.26	<5.64	<2.26	<5.64	34.5	43.3	**419**	33.4	***876***	<2.26	12.2	98.4	21.4	10.2	**26.9**	<2.26	<2.26	49.4	<5.64	<2.26	<2.26	**1300**	1624.7
	18/08/2021	<0.81	<0.81	<0.81	<0.81	<2.02	<0.81	<2.02	<0.81	<2.02	<0.81	<2.02	28.9	32.8	**306**	21.2	***461***	<0.81	6	80.1	15.6	8.22	**19.4**	<0.81	<0.81	20.8	<2.02	<0.81	<0.81	**767**	1000
	3/03/2022	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.62	<0.25	<0.62	<0.25	<0.62	6.68	7.78	**82.5**	4.78	***67.2***	<0.25	2	16.3	1.75	3.4	**4.52**	<0.25	<0.25	1.75	<0.62	<0.25	<0.25	**150**	199
	24/08/2022	<0.05	0.08	<0.05	<0.05	<0.09	<0.04	<0.09	0.14	<0.09	<0.04	<0.09	17.5	20.5	**163**	9.26	***152***	0.04	3	38.4	7.83	4.37	**8.35**	0.05	<0.04	3.09	<0.09	<0.04	<0.04	**315**	428
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.24	0.25	**2.75**	0.15	***6.05***	0.04	0.6	0.73	0.4	0.06	0.15	<0.02	<0.02	<0.04	<0.05	<0.02	0.02	**8.8**	11.4
	24/08/2023	<0.96	<0.96	1.53	<0.96	<2.39	<0.96	<2.39	5.16	<2.39	<0.96	<2.39	34.5	40.6	**419**	35.9	***786***	<0.96	5.3	99	14.8	10.2	**32.7**	<0.96	<0.96	2.48	<2.39	<0.96	<0.96	**1200**	1490
	7/03/2024	<0.35	<0.35	1.13	<0.35	<0.87	<0.35	<0.87	3.22	<0.87	<0.35	<0.87	31.3	34.2	**336**	29.3	***763***	0.56	2.1	72.1	14.2	9.17	**27.1**	<0.35	<0.35	2.23	<0.87	<0.35	<0.35	**1100**	1320
Former Fire Training Area																															
MW131	21/09/2018	<0.01	0.045	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.45	0.38	**2.1**	0.15	***5.3***	<0.01	0.12	0.93	0.18	0.14	0.26	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**7.4**	10.055
	21/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.57	0.44	**2.6**	0.13	***5.3***	<0.01	2.7	8.3	2.2	0.18	0.27	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**7.9**	22.69
	9/07/2019	<0.01	0.15	0.016	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.3	1	**7.2**	0.41	***16***	<0.01	0.4	2.4	0.58	0.44	**0.79**	<0.01	<0.01	0.013	<0.02	<0.02	<0.01	**23.2**	30.699
	9/07/2019	<0.01	0.12	0.017	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.1	0.87	**6.1**	0.36	***15***	<0.01	0.33	2.2	0.49	0.37	**0.69**	<0.01	<0.01	0.013	<0.02	<0.02	<0.01	**21.1**	27.66
	9/07/2019	<0.01	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.1	0.95	**6.4**	0.44	***14***	<0.01	0.33	2.5	0.46	0.47	**0.83**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**20.4**	27.59
	3/12/2019	<0.01	0.1	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.7	0.67	**4**	0.28	***11***	<0.01	0.22	1.5	0.33	0.25	0.46	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**15**	19.51
	28/10/2020	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.53	0.44	**2.95**	0.21	***5.88***	<0.02	<0.50	1.08	0.2	0.17	0.28	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**8.83**	11.81
	31/03/2021	<0.05	0.08	<0.05	<0.05	<0.1	<0.04	<0.1	<0.04	<0.1	<0.04	<0.1	1	1.02	**4.97**	0.23	***8.08***	<0.04	0.2	2.02	0.41	0.34	0.47	<0.04	<0.04	<0.04	<0.1	<0.04	<0.04	**13.05**	18.82
	19/08/2021	<0.05	0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.54	0.56	**2.8**	0.14	***5.32***	<0.02	<0.1	1.09	0.22	0.18	0.27	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**8.12**	11.2
	3/03/2022	<0.05	0.08	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.74	0.64	**3.55**	0.18	***5.75***	<0.02	0.1	1.37	0.23	0.26	0.39	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**9.3**	13.3
	7/10/2022	<0.05	0.44	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	8.3	7.68	**36.8**	2.93	***45.3***	<0.05	1.6	12.5	3.08	2.22	**3.6**	<0.05	<0.05	0.1	<0.12	<0.05	<0.05	**82.1**	124
	9/03/2023	<0.09	0.56	<0.09	<0.09	<0.23	<0.09	<0.23	<0.09	<0.23	<0.09	<0.23	12.2	10.3	**51.2**	3.6	***75.5***	<0.09	2.8	19.9	4.82	3.23	**5.98**	<0.09	<0.09	<0.2	<0.23	<0.09	<0.09	**127**	190
	25/08/2023	<0.1	0.5	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	5.1	4.48	**27.4**	1.38	***36.2***	<0.1	1.5	13.1	2.1	1.87	**3.35**	<0.1	<0.1	<0.1	<0.24	<0.1	<0.1	**63.6**	97
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	1.59	1.14	**5.95**	0.32	***3.69***	<0.02	0.3	1.89	0.52	0.37	**0.69**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**9.64**	16.5
Former Helicopter Squadron																															
MW102	21/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.55	0.39	**2.3**	0.13	***3.3***	<0.01	0.59	1.6	0.38	0.093	0.17	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**5.6**	9.503
	21/09/2018	<0.01	0.014	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.61	0.45	**2.6**	0.11	***1.9***	<0.01	0.13	0.52	0.14	0.11	0.19	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**4.5**	6.774
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.43	0.3	**1.6**	0.072	***0.36***	<0.01	0.1	0.32	0.09	0.064	0.12	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**1.96**	3.456
	3/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.52	0.41	**2.8**	0.11	***0.37***	<0.01	0.13	0.47	0.12	0.085	0.14	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**3.17**	5.155
	29/10/2020	<0.05	0.12	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.08	**0.54**	0.03	***0.88***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.42**	1.86
	31/03/2021	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.12	**0.73**	0.03	***0.98***	<0.02	0.1	0.11	0.05	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.71**	2.38
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.6	0.51	**2.96**	0.19	***1.39***	<0.02	0.1	0.52	0.14	0.11	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**4.35**	6.72
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.47	0.38	**2.27**	0.17	***1.47***	<0.02	<0.1	0.37	0.08	0.09	0.18	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.74**	5.48
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.46	0.33	**2.11**	0.15	***1.04***	<0.02	<0.1	0.34	0.11	0.08	0.16	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.15**	4.78
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.07	**0.42**	0.04	***0.42***	<0.02	<0.1	0.06	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.84**	1.2
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.42	0.34	**1.85**	0.16	***1.92***	<0.02	<0.1	0.32	0.11	0.08	0.19	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.77**	5.39
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.06	<0.02	**0.1**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.16**	0.16
Lavarack Golf Course and Sporting Fields																															
MW065	14/09/2017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.83	0.89	**40.2**	0.69	***17.5***	<0.02	<0.1	2.89	0.44	0.22	0.37	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**57.7**	64.03
	17/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.52	0.46	**9.2**	0.25	***8.2***	<0.01	0.47	3.8	0.46	0.12	0.22	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**17.4**	23.7
	17/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.55	0.5	**9**	0.32	***8.7***	<0.01	0.26	2	0.3	0.12	0.25	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**17.7**	22
	4/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.51	0.53	**8.2**	0.25	***7.5***	<0.01	0.2	1.5	0.23	0.11	0.19	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**15.7**	19.22
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.09	<0.03	<0.09	<0.03	<0.09	<0.03	<0.09	0.36	0.45	**7.17**	0.27	***8.23***	<0.03	<0.2	1.47	0.2	0.09	0.18	<0.03	<0.03	<0.03	<0.09	<0.03	<0.03	**15.4**	18.42
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.4	0.52	**7.19**	0.39	***10.8***	<0.02	0.2	1.58	0.26	0.11	0.23	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**17.99**	21.68
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	0.42	0.52	**7.37**	0.35	***8.78***	<0.05	<0.2	1.6	0.24	0.13	0.24	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	**16.2**	19.6
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.51	0.53	**8.05**	0.34	***9***	<0.02	0.2	1.93	0.14	0.32	0.29	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	**17**	21.3
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.39	0.53	**7.22**	0.42	***9.83***	<0.02	0.1	1.59	0.25	0.13	0.24	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**17**	20.7
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.52	0.59	**8.87**	0.51	***12.9***	<0.02	0.2	2.13	0.35	0.14	0.3	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**21.8**	26.5
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.52	0.73	**9.73**	0.46	***9.93***	<0.02	<0.1	2.29	0.34	0.17	0.33	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	**19.7**	24.5
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.12	**2.02**	0.19	***7.54***	<0.02	<0.1	0.42	0.1	0.03	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**9.56**	10.6

AECOM

Table T7: Historical Groundwater PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
MW120	13/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.022	0.015	**0.15**	<0.01	0.021	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.171**	0.208
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.086	0.014	**0.13**	<0.01	0.034	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.164**	0.264
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	<0.02	**0.13**	<0.02	***0.14***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.27**	0.37
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.19	0.03	**0.16**	<0.02	**0.12**	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.28**	0.52
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	<0.02	**0.09**	<0.02	**0.12**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.21**	0.31
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	<0.02	0.07	<0.02	**0.12**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.19**	0.26
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	<0.02	0.06	<0.02	**0.1**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.16**	0.26
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.03	<0.02	**0.08**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.11**	0.14
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.04	<0.02	**0.12**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.16**	0.19
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.03	<0.02	**0.08**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.11**	0.15
MW121	13/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.033	0.028	**0.25**	<0.01	0.035	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.285**	0.346
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.063	0.042	**0.3**	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.3**	0.405
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.04	**0.33**	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.39**	0.48
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.03	**0.27**	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.33**	0.4
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.04	**0.28**	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.34**	0.42
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.04	**0.26**	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.32**	0.4
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.04	**0.3**	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.37**	0.45
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.06	**0.42**	<0.02	**0.08**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.5**	0.65
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.04	**0.3**	<0.02	**0.11**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.41**	0.49
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.04	**0.26**	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.33**	0.41
MW122	26/09/2018	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.22	0.19	**1.7**	0.13	***3.9***	<0.01	0.25	0.17	0.035	0.045	0.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**5.6**	6.79
	26/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.2	0.19	**1.5**	0.08	***3.8***	<0.01	0.15	0.2	0.044	0.034	0.11	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**5.3**	6.308
	26/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.2	0.18	**1.6**	0.08	***3.6***	<0.01	0.14	0.2	0.044	0.034	0.11	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**5.2**	6.188
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.063	0.042	**0.3**	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**4.3**	5.102
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.19	0.17	**1.5**	0.1	***3.1***	<0.01	0.13	0.21	0.044	0.03	0.095	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**4.6**	5.569
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.04	**0.33**	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.65**	3.07
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.03	**0.27**	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.16**	0.21
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.06	**0.39**	0.03	***0.85***	<0.02	<0.1	0.05	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.24**	1.51
	3/03/2022	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	0.11	<0.1	**0.79**	<0.1	***2.2***	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.1	**2.99**	3.1
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.17	**1.25**	0.1	***2.88***	<0.02	<0.1	0.13	0.03	0.02	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**4.13**	4.83
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.12	**0.94**	0.07	***2.37***	<0.02	<0.1	0.11	0.02	<0.02	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.31**	3.86
	24/08/2023	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.18	0.16	**1.14**	0.1	***3.56***	<0.02	0.1	0.15	0.04	0.03	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**4.7**	5.62
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
MW123I	18/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.16	0.089	**0.2**	<0.01	**0.096**	<0.01	<0.05	0.041	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.296**	0.586
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.55	0.43	**1.2**	<0.01	<0.02	<0.01	<0.05	0.21	0.041	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**1.2**	2.431
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.4	0.31	**1**	<0.01	<0.02	<0.01	<0.05	0.17	0.032	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**1**	1.912
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.3	0.22	**0.7**	<0.02	<0.01	<0.02	<0.1	0.13	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.7**	1.38
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.12	**0.37**	<0.02	<0.01	<0.02	<0.1	0.07	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.37**	0.73
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.2	0.18	**0.51**	<0.02	<0.01	<0.02	<0.1	0.09	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.51**	0.98
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.52	0.38	**0.99**	<0.02	<0.01	<0.02	<0.1	0.26	<0.02	0.05	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.99**	2.2
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.22	0.2	**0.75**	<0.02	<0.01	<0.02	<0.1	0.11	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.75**	1.28
	8/03/2023	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	4.21	4.04	**14.4**	0.06	0.04	<0.02	0.3	2.38	0.38	0.17	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**14.4**	26.1
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.21	0.14	**0.41**	<0.02	<0.01	<0.02	<0.1	0.07	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.41**	0.83
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.24	0.14	**0.59**	<0.02	0.01	<0.02	<0.1	0.08	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.6**	1.06
MW123S	18/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.7	0.6	**9.9**	1	***1.9***	<0.01	0.23	1	0.21	0.16	**0.59**	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**11.8**	16.29
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.94	0.82	**27**	0.88	***3***	<0.01	0.35	2	0.33	0.32	0.52	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**30**	36.16
	4/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.88	0.74	**12**	0.84	***1.4***	<0.01	0.28	1	0.21	0.21	0.49	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**13.4**	18.05
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.09	<0.03	<0.09	<0.03	<0.09	<0.03	<0.09	0.86	0.76	**9.96**	0.99	***2.64***	<0.03	0.2	1.13	0.2	0.16	0.51	<0.03	<0.03	<0.03	<0.09	<0.03	<0.03	**12.6**	17.4
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	1.03	1.02	**17.5**	2.04	***2.68***	<0.02	0.3	1.61	0.41	0.31	**0.88**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**20.18**	27.78
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.75	0.78	**7.98**	1.1	***3.24***	<0.02	0.2	1.05	0.2	0.16	0.52	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**11.2**	16
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.69	0.63	**9.43**	1.2	***6.97***	<0.02	0.2	0.9	0.15	0.17	**0.63**	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	**16.4**	21
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.74	0.66	**10.2**	1.02	***4.21***	<0.02	0.1	0.94	0.2	0.17	0.52	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**14.4**	18.8
	8/03/2023	<0.09	<0.09	<0.09	<0.09	<0.23	<0.09	<0.23	<0.09	<0.23	<0.09	<0.23	0.83	0.6	**6.66**	0.83	***6.25***	<0.09	<0.5	0.8	0.14	<0.09	0.37	<0.09	<0.09	<0.09	<0.23	<0.09	<0.09	**12.9**	16.5
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.78	0.74	**6.93**	0.81	***5.08***	<0.02	<0.1	0.76	0.14	0.12	0.44	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	**12**	15.8
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.3	0.2	**1.82**	0.12	***0.83***	<0.02	<0.1	0.31	0.08	0.05	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.65**	3.8
Monocell																															
MW072	22/06/2016	<0.00001	0.00014	<0.00001	-	-	<0.00005	-	<0.00005	-	<0.00005	-	0.018	-	**0.091**	-	0.00055	<0.00001	0.0021	0.035	0.0058	0.0041	0.0066	<0.00001	<0.00001	0.0032	<0.00001	<0.00001	<0.00001	**0.09155**	0.16649
	22/09/2017	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	33.5	38	**326**	8.92	***25.8***	<0.1	2.6	60	8.67	7.37	**10**	<0.1	<0.1	2.89	<0.25	<0.1	<0.1	**351.8**	523.75
	18/10/2018	<0.01	0.1	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.18	6.5	**74**	2.5	***20***	<0.01	1.2	11	2.1	1.5	**3.1**	<0.01	<0.01	2.6	<0.02	<0.02	<0.01	**94**	124.78
	3/12/2019	<0.01	0.034	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	2.1	2	**24**	1.3	***42***	<0.01	0.55	4.8	0.71	0.5	**1.2**	<0.01	<0.01	2.3	<0.02	<0.02	<0.01	**66**	81.494
	17/04/2020	<0.05	0.31	<0.05	<0.05	<0.13	<0.05	<0.13	<0.05	<0.13	<0.05	<0.13	8.7	13.7	**80.3**	9.3	***100***	<0.05	1.5	19.6	3.1	2.19	**5.56**	<0.05	<0.05	5.23	<0.13	<0.05	<0.05	**119.7**	151.98
	28/10/2020	<0.47	<0.47	<0.47	<0.47	<1.18	<0.47	<1.18	<0.47	<1.18	<0.47	<1.18	4.55	4.55	**39**	4.5	***80.7***	<0.47	<2.4	8.82	1.61	1.14	**2.94**	<0.47	<0.47	4.17	<1.18	<0.47	<0.47	**180.3**	249.49
	3/02/2021	<0.01	0.19	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	9.2	8.6	**85**	8.2	***230***	<0.01	0.95	16	3.1	2	**5.2**	<0.01	<0.01	7.3	<0.01	<0.01	<0.01	**315**	379.24
	2/03/2021	<0.38	<0.38	<0.38	<0.38	<0.96	<0.38	<0.96	<0.38	<0.96	<0.38	<0.96	6.52	6.68	**52.6**	5.8	***169***	<0.38	<1.9	12.2	2.34	1.57	**4.14**	<0.38	<0.38	5.18	<0.96	<0.38	<0.38	**222**	266
	2/03/2021	<0.38	<0.38	<0.38	<0.38	<0.96	<0.38	<0.96	<0.38	<0.96	<0.38	<0.96	7.56	6.27	**50.6**	6.19	***170***	<0.38	<1.9	12	2.29	1.64	**3.94**	<0.38	<0.38	5.2	<0.96	<0.38	<0.38	**221**	266
	31/03/2021	<0.42	<0.42	<0.42	<0.42	<1.05	<0.42	<1.05	<0.42	<1.05	<0.42	<1.05	7.35	8.1	**61.4**	6	***150***	<0.42	<2.1	12.9	2.27	1.68	**4.37**	<0.42	<0.42	4.37	<1.05	<0.42	<0.42	**211.4**	258.44
	20/08/2021	<0.24	<0.24	<0.24	<0.24	<0.6	<0.24	<0.6	<0.24	<0.6	<0.24	<0.6	5.69	6.91	**44.9**	3.47	***82.8***	<0.24	1.4	10.1	1.91	1.39	**2.63**	<0.24	<0.24	2.82	<0.6	<0.24	<0.24	**128**	164
	3/03/2022	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	5.39	5.27	**37.2**	3.44	***96***	<0.1	0.8	8.68	1.12	1.57	**2.78**	<0.1	<0.1	2.6	<0.25	<0.1	<0.1	**133**	165
	25/08/2022	<0.05	0.07	<0.05	<0.05	<0.09	<0.04	<0.09	<0.04	<0.09	<0.04	<0.09	5.34	5.92	**37.2**	3.22	***60.3***	<0.04	0.3	7.8	1.48	1	**2.03**	<0.04	<0.04	1.8	<0.09	<0.04	<0.04	**97.5**	126
	9/03/2023	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	7.92	7.03	**39.8**	3.24	***76.3***	<0.1	0.7	10	1.86	1.07	**2.3**	<0.1	<0.1	2.27	<0.24	<0.1	<0.1	**116**	152
	25/08/2023	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	5.66	5.44	**39.3**	2.26	***50***	<0.1	0.7	9.73	1.35	0.99	**2.07**	<0.1	<0.1	1.59	<0.24	<0.1	<0.1	**89.3**	119
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	4.66	4.9	**32.1**	1.72	***42***	<0.02	0.4	6.15	1.12	0.76	**1.52**	<0.02	<0.02	1.16	<0.05	<0.02	<0.02	**74.1**	96.5

AECOM

Table T7: Historical Groundwater
PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

Location ID	Sample Date	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)															***0.13***								***220***								
MW074	22/06/2016	<0.00001	0.00015	<0.00001	-	-	<0.00005	-	<0.00005	-	<0.00005	-	0.0049	-	0.019	-	0.00012	<0.00001	0.00082	0.011	0.0021	0.0015	0.0025	<0.00001	<0.00001	0.0014	<0.00001	<0.00001	<0.00001	0.01912	0.04349
	14/09/2017	<0.05	0.18	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	9.72	8.32	**69.5**	4.16	***51.2***	<0.02	<0.1	15	2.86	2.02	**3.62**	<0.02	<0.02	1.53	<0.05	<0.02	<0.02	**120.7**	168.11
	13/10/2018	<0.01	0.16	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	4.1	4.1	**40**	1.6	***32***	<0.01	1.1	10	2.1	1.3	**2.7**	<0.01	<0.01	1.7	<0.02	<0.02	<0.01	**72**	100.86
	12/07/2019	<0.01	0.19	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	6.5	5.8	**53**	2.3	***53***	<0.01	0.99	9.9	1.9	1.3	**2.7**	<0.01	<0.01	1.5	<0.02	<0.02	<0.01	**106**	139.08
	3/12/2019	<0.01	0.15	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	5.3	4.8	**45**	4.1	***45***	<0.01	0.98	10	1.7	1.3	**2.5**	<0.01	<0.01	1.5	<0.02	<0.02	<0.01	**90**	122.33
	19/04/2020	<0.05	0.17	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	4.89	7.56	**49.2**	3.37	***57.6***	<0.05	1	11.2	1.91	1.32	**2.78**	<0.05	<0.05	1.78	<0.12	<0.05	<0.05	**106.8**	142.78
	19/04/2020	<0.05	0.17	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	4.94	7.35	**47.8**	3.2	***44.7***	<0.05	1	11.1	1.91	1.31	**2.64**	<0.05	<0.05	1.54	<0.12	<0.05	<0.05	**92.5**	127.66
	19/04/2020	<0.01	0.22	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.7	8	**61**	4.3	***66***	<0.01	1.2	12	2.3	1.5	**3.1**	<0.01	<0.01	2	<0.01	<0.01	<0.01	**127**	167.32
	28/10/2020	<0.48	<0.48	<0.48	<0.48	<1.20	<0.48	<1.20	<0.48	<1.20	<0.48	<1.20	5.93	5.84	**41.1**	2.87	***47.9***	<0.48	<2.4	10.2	1.96	1.48	**2.68**	<0.48	<0.48	1.44	<1.20	<0.48	<0.48	**89**	121.4
	2/03/2021	<0.07	0.11	<0.07	<0.07	<0.19	<0.07	<0.19	<0.07	<0.19	<0.07	<0.19	4.35	4.4	**31.6**	2.15	***33***	<0.07	0.6	7.4	1.53	1.06	**1.98**	<0.07	<0.07	1.1	<0.19	<0.07	<0.07	**64.6**	89.3
	31/03/2021	<0.4	<0.4	<0.4	<0.4	<1.01	<0.4	<1.01	<0.4	<1.01	<0.4	<1.01	3.89	4.62	**33.4**	2.03	***41.8***	<0.4	<2	7.38	1.58	0.93	**2.07**	<0.4	<0.4	1.05	<1.01	<0.4	<0.4	**75.2**	98.75
	19/08/2021	<0.19	0.21	<0.19	<0.19	<0.48	<0.19	<0.48	<0.19	<0.48	<0.19	<0.48	6.31	8.1	**52.9**	3.14	***54.2***	<0.19	1.4	12.8	2.46	1.71	**3.37**	<0.19	<0.19	1.69	<0.48	<0.19	<0.19	**107**	148
	3/03/2022	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	4.85	4.85	**37.6**	2.42	***45.6***	<0.1	0.8	8.25	1.15	1.59	**2.78**	<0.1	<0.1	1.34	<0.25	<0.1	<0.1	**83.2**	111
	25/08/2022	<0.05	0.14	<0.05	<0.05	<0.09	<0.04	<0.09	<0.04	<0.09	<0.04	<0.09	5.95	6.48	**41.5**	3.59	***55***	<0.04	0.4	9.42	1.82	1.18	**2.34**	<0.04	<0.04	1.54	<0.09	<0.04	<0.04	**96.5**	129
	9/03/2023	<0.05	0.08	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	6	6.14	**41.4**	3.33	***51***	<0.05	0.8	9.32	1.73	1.26	**2.85**	<0.05	<0.05	1.81	<0.12	<0.05	<0.05	**92.4**	126
	25/08/2023	<0.1	0.11	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	6.76	6.52	**51.6**	3.09	***59.5***	<0.1	0.7	12.5	1.75	1.36	**3.18**	<0.1	<0.1	1.89	<0.25	<0.1	<0.1	**111**	149
	7/03/2024	<0.05	0.08	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	4.08	4.5	**34.5**	2.14	***38.3***	<0.02	0.4	6.51	1.19	0.91	**1.94**	<0.02	<0.02	1.1	<0.05	<0.02	<0.02	**72.8**	95.6
MW106	31/08/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.041	<0.01	**0.12**	<0.01	**0.087**	<0.01	<0.05	0.018	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.207**	0.266
	31/08/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.042	<0.01	**0.14**	<0.01	**0.093**	<0.01	0.065	0.026	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.233**	0.366
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.04	<0.01	**0.098**	<0.01	0.043	<0.01	<0.05	0.014	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.141**	0.195
	3/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.041	0.017	**0.2**	<0.01	**0.08**	<0.01	<0.05	0.031	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.28**	0.369
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	**0.12**	<0.02	**0.09**	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.21**	0.28
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	<0.02	0.07	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.12**	0.2
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	**0.25**	<0.02	**0.1**	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.35**	0.48
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.02	**0.12**	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.17**	0.23
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	<0.02	**0.16**	<0.02	**0.09**	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.25**	0.37
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.04	**0.35**	<0.02	***0.18***	<0.02	<0.1	0.07	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.53**	0.79
	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.08	0.03	**0.32**	<0.02	***0.4***	<0.02	<0.1	0.06	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.72**	0.82
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	0.06	<0.02	**0.08**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.14**	0.19
Stockpile Designated Area 2																															
MW141	15/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.37	0.3	**2.7**	0.059	***0.76***	<0.01	0.19	0.86	0.15	0.046	0.069	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**3.46**	5.504
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.42	0.34	**3.1**	0.076	***0.87***	<0.01	0.13	0.81	0.14	0.047	0.097	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**3.97**	6.03
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.34	0.28	**2.3**	0.066	***0.72***	<0.01	0.11	0.67	0.11	0.041	0.081	<0.01	<0.01	0.019	<0.02	<0.02	<0.01	**3.02**	4.737
	3/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.23	0.2	**1.6**	0.054	***0.58***	<0.01	0.11	0.44	0.078	0.025	0.054	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**2.18**	3.371
	3/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.23	0.19	**1.5**	0.055	***0.59***	<0.01	0.11	0.42	0.077	0.027	0.054	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**2.09**	3.253
	3/12/2019	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.27	0.23	**1.6**	0.09	***0.83***	<0.01	0.11	0.52	0.09	0.04	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**2.43**	3.88
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.27	0.24	**1.68**	0.07	***0.64***	<0.02	<0.1	0.49	0.09	0.03	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.32**	3.58
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.22	0.2	**1.61**	0.07	***0.77***	<0.02	<0.1	0.48	0.1	0.04	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.38**	3.56
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.1	**0.78**	0.03	***0.37***	<0.02	<0.1	0.23	0.05	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.15**	1.73
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.14	**1.06**	0.05	***0.51***	<0.02	<0.1	0.28	0.02	0.05	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.57**	2.33
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.15	**1.12**	0.04	***0.52***	<0.02	<0.1	0.28	0.05	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.64**	2.37
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.19	0.13	**0.96**	0.04	***0.44***	<0.02	<0.1	0.23	0.04	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.4**	2.07
	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.09	**0.84**	0.03	***0.42***	<0.02	<0.1	0.19	0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.26**	1.76
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.06	**0.52**	0.02	***0.28***	<0.02	<0.1	0.1	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.8**	1.09
Suspected AFFF Disposal Area																															
MW101	20/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.057	0.018	**0.2**	0.011	***0.64***	<0.01	<0.05	0.042	<0.02	<0.01	0.016	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.84**	0.984
	20/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.058	0.017	**0.23**	0.012	***0.57***	<0.01	0.081	0.26	0.055	<0.01	0.012	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.8**	1.295
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.13	0.035	**0.28**	<0.01	***0.53***	<0.01	<0.05	0.033	<0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.81**	1.018
	3/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.086	0.035	**0.36**	0.011	***0.62***	<0.01	<0.05	0.051	<0.02	0.01	0.018	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.98**	1.191
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.2	0.1	**0.8**	0.04	***1.27***	<0.02	<0.1	0.13	0.03	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.07**	2.63
	31/03/2021	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.26	0.08	**0.34**	<0.02	***0.34***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.68**	1.17
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.26	0.1	**0.6**	0.03	***0.67***	<0.02	<0.1	0.09	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.27**	1.78
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.41	0.12	**0.42**	<0.02	***0.37***	<0.02	<0.1	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.79**	1.41
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.43	0.14	**0.53**	<0.02	***0.37***	<0.02	<0.1	0.07	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.9**	1.55
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.03	**0.15**	<0.02	***0.2***	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.35**	0.56
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.06	**0.35**	<0.02	***0.69***	<0.02	<0.1	0.08	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.04**	1.34
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.01	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.06
Top, Middle and Lower Dams																															
MW138	10/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.88	0.73	**5.8**	0.21	***4.5***	<0.01	0.43	2.2	0.41	0.16	0.34	<0.01	<0.01	0.041	<0.02	<0.02	<0.01	**10.3**	15.701
	10/10/2018	<0.01	0.02	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.99	0.98	**5.5**	0.24	***4.6***	<0.01	0.21	1.3	0.26	0.16	0.29	<0.01	<0.01	0.047	<0.02	<0.02	<0.01	**10.1**	14.597
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.88	1.1	**6.19**	0.35	***7.6***	<0.02	0.2	1.46	0.29	0.2	0.29	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	**13.79**	18.6
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.1	<0.04	<0.1	<0.04	<0.1	<0.04	<0.1	0.9	0.95	**6.15**	0.42	***8.81***	<0.04	0.2	1.41	0.29	0.19	0.37	<0.04	<0.04	0.04	<0.1	<0.04	<0.04	**14.96**	19.73
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.94	0.96	**6.01**	0.39	***6.91***	<0.02	0.2	1.5	0.26	0.2	0.4	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	**12.9**	17.8
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.88	0.77	**5.17**	0.4	***7.09***	<0.02	0.1	1.21	0.19	0.22	0.34	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	**12.3**	16.4
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.8	0.85	**5.03**	0.38	***6.04***	<0.02	0.1	1.17	0.24	0.18	0.32	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	**11.1**	15.2
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	1.3	1.18	**6.75**	0.64	***8.75***	<0.02	0.2	1.62	0.33	0.22	0.43	<0.02	<0.02	0.05	<0.05	<0.02	<0.02	**15.5**	21.5
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.89	1.03	**6.03**	0.46	***8.33***	<0.02	<0.1	1.44	0.31	0.2	0.43	<0.02	<0.02	0.04	<0.06	<0.02	<0.02	**14.4**	19.2
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.93	0.85	**5.37**	0.44	***7.51***	<0.02	0.1	1.19	0.25	0.19	0.36	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	**12.9**	17.2

AECOM

Table T7: Historical Groundwater
PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
Base Boundary																															
MW002	13/09/2017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.2	0.12	**1.38**	0.03	***0.92***	<0.02	<0.1	0.13	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.3**	2.82
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.02	<0.01	<0.05	0.16	0.084	**1.4**	0.024	***0.94***	<0.01	0.14	0.39	0.07	0.02	0.041	<0.01	<0.01	0.014	<0.02	<0.02	<0.01	**2.34**	3.283
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.17	0.092	**1.3**	0.027	***0.92***	<0.01	0.11	0.25	0.061	0.023	0.042	<0.01	<0.01	0.021	<0.02	<0.02	<0.01	**2.22**	3.016
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.075	0.042	**0.77**	0.024	***2.3***	<0.01	<0.05	0.061	<0.02	<0.01	0.022	<0.01	<0.01	0.022	<0.02	<0.02	0.017	**3.07**	3.333
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.099	0.093	**1.5**	0.039	***0.81***	<0.01	0.074	0.031	<0.02	<0.01	0.014	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**2.31**	2.66
	19/04/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.08	**1.14**	0.06	***2.04***	<0.02	<0.1	0.14	0.03	<0.02	0.04	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	**3.18**	3.65
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	**0.44**	<0.02	***0.79***	<0.02	<0.1	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.23**	1.41
	2/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.07	**1.32**	0.08	***2.88***	<0.02	<0.1	0.17	0.03	0.02	0.06	<0.02	<0.02	0.06	<0.05	<0.02	<0.02	**4.2**	4.79
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.13	**2.19**	0.09	***2.72***	<0.02	<0.1	0.18	0.03	0.02	0.06	<0.02	<0.02	0.05	<0.05	<0.02	<0.02	**4.91**	5.61
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.11	**1.25**	0.05	***1.28***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.53**	2.88
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.05	**0.74**	0.03	***1.46***	<0.02	<0.1	0.07	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.2**	2.46
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.05	**0.53**	0.02	***0.82***	<0.02	<0.1	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.35**	1.52
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.13	**1.93**	0.09	***3.16***	<0.02	<0.1	0.2	0.04	0.02	0.06	<0.02	<0.02	0.07	<0.05	<0.02	0.02	**5.09**	5.89
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.06	**0.61**	<0.02	***0.78***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.39**	1.57
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.05	**0.89**	0.04	***1.87***	<0.02	<0.1	0.08	<0.02	<0.02	0.03	<0.02	<0.02	0.04	<0.05	<0.02	0.02	**2.76**	3.1
MW003	8/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	0.019	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.019
	16/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	17/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	23/04/2020	<0.05	0.65	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	0.02	**0.4**	0.03	***0.87***	<0.02	<0.1	0.07	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.27**	2.08
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.09**	0.09
	2/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.05	**0.74**	0.03	***1.46***	<0.02	<0.1	0.07	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.2**	2.46
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	24/08/2023	<0.05	0.18	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.18
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW117D	27/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.039	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.039	0.039
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	28/10/2020	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.1
	30/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	14/02/2022	<0.05	0.11	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.12	<0.02	**0.11**	<0.02	**0.13**	<0.02	<0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	**0.24**	0.38
MW117S	12/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.5	1.7	**19**	1	***4.3***	<0.01	0.41	4.2	0.57	0.34	**0.58**	<0.01	<0.01	0.038	<0.02	<0.02	<0.01	**23.3**	33.638
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.4	1.4	**25**	0.71	***6.2***	<0.01	0.34	4.4	0.53	0.31	0.51	<0.01	<0.01	0.035	<0.02	<0.02	<0.01	**31.2**	40.835
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	1.3	1.2	**19**	0.8	***6.3***	<0.01	0.32	3.7	0.46	0.25	0.46	<0.01	<0.01	0.029	<0.02	<0.02	<0.01	**25.3**	33.819
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.09	<0.04	<0.09	<0.04	<0.09	<0.04	<0.09	1.25	1.48	**19.2**	0.78	***6.32***	<0.04	0.4	3.7	0.52	0.31	0.5	<0.04	<0.04	0.04	<0.09	<0.04	<0.04	**25.5**	34.5
	30/03/2021	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	1.19	1.52	**17.3**	0.75	***6.57***	<0.02	0.3	3.33	0.51	0.26	0.5	<0.02	<0.02	0.05	<0.06	<0.02	<0.02	**23.87**	32.28
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	1.2	1.37	**15.3**	0.66	***7.47***	<0.05	<0.2	3.41	0.39	0.3	0.5	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	**22.8**	30.6
MW118	3/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.039	<0.01	0.045	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.045	0.084
	11/07/2019	<0.01	0.11	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.036	<0.01	0.037	<0.01	<0.02	<0.01	<0.05	0.028	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.037	0.211
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.04	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.09
	30/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	0.04	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.09
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.02	0.04	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.1
	18/02/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.03	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.07
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	0.03	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.08
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	<0.02	0.03	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.12
	25/08/2023	<0.05	0.2	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.02	0.04	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.11**	0.37
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.07
MW119	3/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.033	<0.01	0.024	<0.01	***0.78***	<0.01	<0.05	0.092	0.11	0.039	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.804**	1.078
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.084	0.012	0.033	<0.01	<0.02	<0.01	0.11	0.2	0.19	0.093	0.031	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.033	0.753
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.1	0.014	0.04	<0.01	<0.02	<0.01	0.075	0.26	0.27	0.13	0.038	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.04	0.927
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	<0.02	0.04	<0.02	<0.01	<0.02	<0.1	0.2	0.22	0.11	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.75
	30/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	<0.02	0.03	<0.02	<0.01	<0.02	<0.1	0.15	0.16	0.09	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.63
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.23	<0.02	0.05	<0.02	<0.01	<0.02	0.1	0.23	0.22	0.15	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	1.08
	18/02/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.29	<0.02	0.06	<0.02	<0.02	<0.02	0.1	0.24	0.16	0.23	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	1.19
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.27	<0.02	0.05	<0.02	0.02	<0.02	<0.1	0.17	0.16	0.13	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	0.91
	7/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.36	<0.02	0.06	<0.02	0.04	<0.02	<0.1	0.19	0.2	0.15	0.13	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.1**	1.13
	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.31	<0.02	0.06	<0.02	0.05	<0.02	0.1	0.21	0.18	0.14	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.11**	1.2
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.34	<0.02	0.05	<0.02	0.04	<0.02	<0.1	0.13	0.16	0.14	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.09**	1

AECOM

Table T7: Historical Groundwater PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
MW124	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	2/11/2020	<0.05	0.17	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.18
	31/03/2021	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.62	<0.25	<0.62	<0.25	<0.62	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<1.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.25	<0.25	<0.25
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW125I	26/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.036	0.017	**0.13**	<0.01	<0.02	<0.01	<0.05	0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.13**	0.193
	11/07/2019	<0.01	0.012	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.037	0.021	**0.18**	<0.01	0.028	<0.01	<0.05	0.026	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.208**	0.304
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.038	0.026	**0.17**	<0.01	0.028	<0.01	<0.05	0.026	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.198**	0.288
	11/07/2019	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.02	**0.16**	<0.01	0.02	<0.01	<0.05	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.18**	0.27
	2/11/2020	<0.05	0.11	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	0.03	**0.17**	<0.02	0.04	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.21**	0.42
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	0.02	**0.18**	<0.02	0.05	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.23**	0.32
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.03	**0.19**	<0.02	0.03	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.22**	0.34
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.03	**0.18**	<0.02	0.03	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.21**	0.32
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	**0.15**	<0.02	0.03	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.18**	0.24
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	0.02	**0.13**	<0.02	0.02	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.15**	0.23
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	**0.15**	<0.02	0.02	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.17**	0.24
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.04	**0.41**	<0.02	0.02	<0.02	<0.1	0.09	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.43**	0.67
MW125S	18/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.085	0.05	**0.3**	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.3**	0.435
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.051	0.022	**0.21**	<0.01	<0.02	<0.01	0.061	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.21**	0.344
	2/11/2020	<0.05	0.41	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.03	**0.24**	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.26**	0.75
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.03	**0.21**	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.21**	0.29
	17/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.27	0.19	**0.96**	<0.02	<0.01	<0.02	<0.1	0.43	0.09	0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.96**	1.97
	2/03/2022	<0.05	0.5	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.38	0.24	**1.36**	<0.02	0.01	<0.02	<0.1	0.54	0.03	0.11	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.37**	3.19
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.08	**0.68**	<0.02	0.02	<0.02	<0.1	0.21	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.7**	1.17
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.05	**0.58**	<0.02	0.02	<0.02	<0.1	0.11	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.6**	0.89
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.37	0.22	**2.28**	<0.02	0.03	<0.02	<0.1	0.75	0.1	0.04	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.31**	3.83
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.59	0.43	**3.82**	0.02	0.04	<0.02	<0.1	0.87	0.17	0.09	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.86**	6.11
Off-Base																															
MW205S	12/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.023	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.23**	0.023
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.023	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.23**	0.023
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.05
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
MW212	11/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	3/11/2020	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.06
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.3	<0.05	<0.07	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	7/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW217	11/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.014	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.014	0.014
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.013	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.013	0.013
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.1	<0.04	<0.1	<0.04	<0.1	<0.04	<0.1	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.1	<0.04	<0.04	<0.01	<0.01
	18/08/2021	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	<0.1
	3/03/2022	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	**0.08**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.1**	0.16
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.06
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.04
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01

AECOM

Table T7: Historical Groundwater
PFAS Analytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0005
PFAS NEMP 2020 Drinking Water (HEPA, 2020)															**0.07**		**0.07**						**0.56**							**0.07**	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
MW220S	12/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	6/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.085	0.065	**0.38**	<0.01	<0.02	<0.01	<0.05	0.021	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.38**	0.551
	3/11/2020	<0.05	0.32	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.13	**0.64**	<0.02	0.04	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.68**	1.32
	1/04/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.29	0.23	**1.04**	<0.02	0.05	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**1.09**	1.63
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.12	**0.5**	<0.02	0.02	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.52**	0.82
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.08	**0.47**	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.48**	0.69
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.02	**0.13**	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.13**	0.19
	7/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.2	0.13	**0.68**	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.7**	1.03
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.09	**0.69**	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.72**	0.98
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.05	**0.28**	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.3**	0.46
MW226	29/11/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	0.096	-	**0.53**	0.01	***0.27***	-	<0.05	0.072	<0.02	<0.01	0.017	<0.01	<0.01	0.019	<0.02	<0.02	<0.01	**0.8**	1.014
	9/08/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	<0.01	0.059	<0.01	**0.093**	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.152**	0.176
	9/08/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	<0.01	0.058	<0.01	**0.098**	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.156**	0.18
	9/08/2018	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.029	0.013	0.05	<0.01	0.06	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.11**	0.152
	4/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.029	0.01	0.048	<0.01	**0.079**	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.127**	0.166
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.04	**0.26**	<0.02	***0.16***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.42**	0.56
	30/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.05	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.08**	0.11
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	0.07	**0.43**	<0.02	**0.11**	<0.02	<0.1	0.08	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.54**	0.86
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.06	**0.32**	<0.02	**0.09**	<0.02	<0.1	0.08	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.41**	0.69
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.06	**0.26**	<0.02	0.04	<0.02	<0.1	0.07	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.3**	0.56
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.03	**0.2**	<0.02	0.05	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.25**	0.41
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.18	0.08	**0.65**	<0.02	0.07	<0.02	<0.1	0.11	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.72**	1.09
	8/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.02	0.06	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	0.13
MW232	12/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.036	<0.01	**0.077**	<0.01	**0.085**	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.162**	0.198
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.066	0.011	**0.11**	<0.01	**0.099**	<0.01	<0.05	0.012	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.209**	0.298
	6/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.032	0.01	**0.095**	<0.01	**0.099**	<0.01	<0.05	0.011	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.194**	0.247
	3/11/2020	<0.10	0.13	<0.10	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.10	<0.10	***0.17***	<0.10	**0.1**	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	**0.27**	0.4
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	<0.02	**0.09**	<0.02	**0.1**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.19**	0.34
	20/08/2021	<0.05	<0.05	<0.05	<0.05	<0.1	<0.04	<0.1	<0.04	<0.1	<0.04	<0.1	0.05	<0.04	**0.09**	<0.04	0.06	<0.04	<0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.1	<0.04	<0.04	**0.15**	0.2
	3/03/2022	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	<0.02	**0.09**	<0.02	**0.1**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.19**	0.36
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	<0.02	**0.09**	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.16**	0.3
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	<0.02	**0.12**	<0.02	**0.13**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.25**	0.42
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	<0.02	**0.1**	<0.02	***0.17***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.27**	0.34
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	<0.02	0.06	<0.02	**0.1**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.16**	0.28
MW233	11/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	6/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	3/11/2020	<0.05	0.15	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.15
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	7/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.04	<0.02	**0.08**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.12**	0.12
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
MW235S	10/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.015	<0.01	0.019	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.034
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.04	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.04
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	<0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.05
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.02
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	0.03	<0.02	0.03	<0.02	**0.12**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	**0.15**	0.18
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.04
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.04
	8/03/2023	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.1	<0.1	<0.1
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.04
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	0.02
MW236S	11/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.068	0.034	**0.32**	<0.01	***0.33***	<0.01	<0.05	0.036	<0.02	<0.01	0.016	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.65**	0.804
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.044	0.011	**0.11**	<0.01	***0.14***	<0.01	<0.05	0.011	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.25**	0.316
	5/12/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.054	0.023	**0.17**	<0.01	***0.18***	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**0.35**	0.427
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	**0.21**	<0.02	***0.16***	<0.02	<0.1	0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.37**	0.49
	31/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	**0.08**	<0.02	**0.09**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.17**	0.2
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.11	<0.04	<0.11	<0.04	<0.11	<0.04	<0.11	0.05	<0.04	**0.16**	<0.04	***0.15***	<0.04	<0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.11	<0.04	<0.04	**0.31**	0.36
	4/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	**0.24**	<0.02	***0.25***	<0.02	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.49**	0.58
	24/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	**0.08**	<0.02	***0.19***	<0.02	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.27**	0.32
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	<0.02	**0.11**	<0.02	***0.17***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.28**	0.36
	24/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.05	<0.02	**0.09**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.14**	0.18
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	<0.02	**0.12**	<0.02	**0.12**	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**0.24**	0.32

AECOM

Table T8: Historical Surface Water
PFAS Analyical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

Location ID	Sample Date	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005
NHMRC (2019) PFAS Recreational Water																							**10**							**2**	
PFAS NEMP 2020 Drinking Water* (HEPA, 2020)															*0.07*		*0.07*						*0.56*							*0.07*	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Eastern PFAS Contamination Area																															
SW119	16/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.061	0.037	*0.36*	0.029	***0.88***	<0.01	<0.05	0.11	0.026	0.015	0.04	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*1.24*	1.24
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.39	0.32	*1.66*	0.04	***0.77***	<0.02	<0.2	0.62	0.12	0.06	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.43**	4.05
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.05	*0.33*	<0.02	***0.42***	<0.02	<0.1	0.1	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.75*	1.06
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.26	0.21	*1.08*	0.03	***0.41***	<0.02	<0.1	0.38	0.07	0.04	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.49*	2.52
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.11	*0.66*	<0.02	***0.28***	<0.02	<0.1	0.18	<0.02	0.03	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.94*	1.45
	10/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.26	0.16	*0.8*	0.04	***0.68***	<0.02	<0.1	0.34	0.06	0.04	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.48*	2.44
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	*0.55*	<0.02	***0.46***	<0.02	<0.1	0.16	0.02	0.24	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.01*	1.47
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.07	*0.41*	0.02	***0.42***	<0.02	<0.1	0.13	0.03	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.83*	1.25
SW121	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.043	0.028	*0.23*	<0.01	***0.24***	<0.01	<0.05	0.054	<0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.47*	0.47
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.043	0.028	*0.22*	<0.01	***0.22***	<0.01	0.085	0.14	0.027	0.017	0.02	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.44*	0.44
	16/12/2018	<0.01	0.088	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.085	0.055	*0.5*	0.024	***0.77***	<0.01	<0.05	0.13	0.028	0.016	0.038	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.155*	1.27
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	0.011	*0.09*	<0.01	0.065	<0.01	<0.05	0.024	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*1.9*	0.155
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.25	0.21	*1.3*	0.029	***0.6***	<0.01	0.13	0.46	0.075	0.035	0.063	<0.01	<0.01	0.027	<0.02	<0.02	<0.01	*1.27*	1.9
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.35	0.32	*2.13*	0.06	***1.19***	<0.02	<0.3	0.71	0.12	0.06	0.09	<0.02	<0.02	0.06	<0.05	<0.02	<0.02	**3.32**	5.09
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.1	*0.76*	0.03	***0.52***	<0.02	<0.1	0.23	0.04	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.28*	1.9
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.71	0.76	*5.52*	0.13	***1.14***	<0.02	0.2	1.58	0.21	0.13	0.22	<0.02	<0.02	0.06	<0.05	<0.02	<0.02	**6.66**	10.7
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.07	*0.46*	<0.02	***0.36***	<0.02	<0.1	0.13	<0.02	0.03	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.82*	1.2
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.24	0.16	*0.97*	0.03	***0.48***	<0.02	<0.1	0.29	0.05	0.03	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.45*	2.3
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.05	*0.34*	<0.02	***0.36***	<0.02	<0.1	0.08	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.7*	0.93
Former Fire Station																															
SW109	16/12/2018	<0.01	<0.01	0.071	<0.01	<0.02	<0.01	<0.05	0.047	<0.02	<0.01	<0.05	0.54	0.38	*3.1*	0.31	***5.2***	<0.01	0.34	1.1	0.39	0.13	0.4	<0.01	<0.01	0.034	<0.02	<0.02	<0.01	**8.3**	8.3
	29/03/2021	<0.50	<0.50	<0.50	<0.50	<1.24	<0.50	<1.24	<0.50	<1.24	<0.50	<1.24	7.25	7	*55.4*	3.53	***72.5***	<0.50	<2.5	20.4	4.12	2.43	*5.61*	<0.50	<0.50	<0.50	<1.24	<0.50	<0.50	**127.9**	178
	1/03/2022	<0.22	<0.22	<0.22	<0.22	<0.56	<0.22	<0.56	<0.22	<0.56	<0.22	<0.56	15.1	16.1	*103*	5.13	***89.2***	<0.22	4	41.1	4.36	8.21	**11.3**	<0.22	<0.22	<0.22	<0.56	<0.22	<0.22	**192**	298
	22/08/2022	<0.05	0.33	0.07	<0.05	<0.10	<0.04	<0.10	0.18	<0.10	<0.04	<0.10	7.41	8.48	*55.6*	5.98	***109***	0.08	1.4	14.8	3.34	2.63	*6.36*	<0.04	<0.04	0.33	<0.10	<0.04	<0.04	**165**	216
	6/03/2023	<0.1	0.1	<0.1	<0.1	<0.25	<0.1	<0.25	0.41	<0.25	<0.1	<0.25	7.23	6.83	*51.4*	3.57	***82.2***	<0.1	1.5	16.8	3.48	2.06	*4.82*	<0.1	<0.1	0.21	<0.25	<0.1	<0.1	**134**	181
	22/08/2023	<0.1	<0.13	<0.1	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	<0.1	<0.24	6.25	5.69	*30.8*	1.06	***47.2***	<0.1	1.5	12	2.15	1.61	*3.55*	<0.1	<0.1	<0.1	<0.24	<0.1	<0.1	**78**	112
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	0.09	<0.05	<0.02	<0.05	1.96	2.59	*19.4*	1.63	***32.4***	0.02	0.4	4.84	0.96	0.61	*1.47*	<0.02	<0.02	0.1	<0.05	<0.02	<0.02	**51.8**	66.5
SW110	14/12/2018	<0.01	0.018	0.033	<0.01	<0.02	<0.01	<0.05	0.027	<0.02	<0.01	<0.05	0.74	0.69	*21*	0.32	***13***	<0.01	0.41	2.3	0.59	0.23	0.51	<0.01	<0.01	0.039	<0.02	<0.02	<0.01	*0.66*	34
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.3	0.19	2.2	0.037	***1.6***	<0.01	0.095	0.22	0.044	0.021	0.048	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**3.8**	3.8
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.062	0.038	*0.41*	<0.01	***0.25***	<0.01	<0.05	0.068	<0.02	<0.01	0.013	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**34**	0.66
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.23	0.16	*1.47*	0.05	***1.28***	<0.02	<0.1	0.25	0.06	0.02	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.75**	3.58
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.06	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	2.13	2.18	*13*	0.81	***17***	<0.02	0.6	4.98	0.48	0.98	*1.14*	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	**30**	43.3
	26/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.03
	7/10/2022	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	2.2	2.56	*17.6*	1.98	***32.9***	<0.05	0.7	4.62	1.01	0.62	*1.51*	<0.05	<0.05	0.14	<0.12	<0.05	<0.05	**50.5**	65.8
	15/03/2023	<0.09	<0.09	<0.09	<0.09	<0.23	<0.09	<0.23	<0.09	<0.23	<0.09	<0.23	4.68	4.93	*33.3*	2.4	***36.9***	<0.09	0.7	9.79	1.91	1.16	*2.67*	<0.09	<0.09	<0.12	<0.23	<0.09	<0.09	**70.2**	98.4
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	3.36	2.78	*15*	0.54	***23.2***	<0.05	0.6	4.72	0.84	0.67	*1.48*	<0.05	<0.05	0.07	<0.12	<0.05	<0.05	**38.2**	53.3
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	0.04	<0.05	<0.02	<0.05	1.57	2.15	*16.2*	1.39	***28.3***	0.02	0.3	3.67	0.74	0.47	*1.24*	<0.02	<0.02	0.08	<0.05	<0.02	<0.02	**44.5**	56.2
Lavarack Golf Course and Sporting Fields																															
SW129	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.02	<0.01	0.034	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.054	0.054
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.02	<0.01	0.036	<0.01	<0.05	0.025	0.021	0.03	0.02	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.056	0.152
	16/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.036	<0.01	0.065	<0.01	0.055	<0.01	<0.05	0.019	0.037	0.011	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.12*	0.223
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.04	*0.31*	<0.02	***0.29***	<0.02	<0.1	0.08	0.09	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.6*	0.94
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.04	*0.31*	<0.02	***0.2***	<0.02	0.1	0.15	0.17	0.04	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.51*	1.14
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	*0.18*	<0.02	***0.11***	<0.02	<0.1	0.06	0.08	0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.29*	0.55
SW130	10/12/2018	<0.01	0.016	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	0.013	*0.079*	<0.01	0.031	<0.01	<0.05	0.014	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.11*	0.177
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.026	0.011	*0.083*	<0.01	0.023	<0.01	0.063	0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.106*	0.226
	16/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.067	0.029	*0.2*	<0.01	*0.13*	<0.01	<0.05	0.032	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.33*	0.458
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.09	*0.58*	0.03	***0.69***	<0.02	<0.1	0.12	0.03	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.27*	1.68
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.04	*0.19*	<0.02	0.04	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.23*	0.36
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.04	*0.23*	<0.02	*0.08*	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.31*	0.45
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.06	*0.4*	<0.02	***0.4***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.8*	1.04
Top, Middle and Lower Dams																															
SW139	2/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.12	0.085	*0.74*	0.025	***0.74***	<0.01	0.056	0.16	0.037	0.017	0.039	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*1.48*	2.019
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.14	*0.84*	0.04	***0.98***	<0.02	<0.1	0.24	0.06	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.82*	2.51
	29/10/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.12	0.089	*0.77*	0.025	***1.1***	<0.01	0.062	0.19	0.043	0.02	0.038	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*1.87*	2.457
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.14	*0.84*	0.04	***0.99***	<0.02	<0.1	0.25	0.05	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.83*	2.52
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.11	*0.84*	0.06	***1.56***	<0.02	<0.1	0.29	0.06	0.03	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.4**	3.16
	22/06/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.18	0.17	*1.18*	0.07	***1.6***	<0.02	<0.1	0.37	0.07	0.05	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.78**	3.79
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.19	0.17	*1.28*	0.08	***1.78***	<0.02	<0.1	0.35	0.06	0.04	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**3.06**	4.05
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.04	*0.31*	<0.02	***0.55***	<0.02	<0.1	0.08	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.86*	1.06
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.1	*0.76*	0.05	***1.06***	<0.02	<0.1	0.21	0.04	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.82*	2.45
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.13	*1*	0.06	***1.34***	<0.02	<0.1	0.28	0.06	0.03	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.34**	3.14
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	0.12	*1.04*	0.06	***1.35***	<0.02	<0.2	0.29	0.04	0.05	0.09	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	**2.39**	3.22
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	*0.13*	<0.02	***0.18***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.31*	0.37

AECOM

Table T8: Historical Surface Water
PFAS Analyical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005
NHMRC (2019) PFAS Recreational Water																							**10**							**2**	
PFAS NEMP 2020 Drinking Water* (HEPA, 2020)															*0.07*		*0.07*						*0.56*							*0.07*	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
SW140	3/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.11	0.078	*0.7*	0.023	***0.71***	<0.01	<0.05	0.14	0.033	0.015	0.038	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*1.41*	1.847
	3/10/2018	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.15	0.1	*0.84*	0.041	***0.92***	<0.01	<0.05	0.18	0.036	0.018	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*1.76*	2.335
	3/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.12	0.082	*0.72*	0.025	***0.76***	<0.01	0.052	0.14	0.034	0.016	0.037	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*1.48*	1.986
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.16	0.14	*1.1*	0.048	***1.6***	<0.01	0.081	0.35	0.067	0.035	0.085	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**2.7**	3.666
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.14	0.13	*1.1*	0.07	***1.5***	<0.01	0.06	0.35	0.05	0.04	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**2.6**	3.55
	10/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.14	0.12	*1*	0.043	***1.5***	<0.01	0.063	0.28	0.063	0.031	0.078	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**2.5**	3.318
	5/08/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.17	0.14	*1.1*	0.049	***2.1***	<0.01	0.083	0.35	0.074	0.035	0.085	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**3.2**	4.186
	5/08/2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.16	0.13	*1.1*	0.08	***1.7***	<0.01	0.06	0.37	0.05	0.04	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**2.8**	3.8
	5/08/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.18	0.15	*1.2*	0.053	***1.6***	<0.01	0.068	0.39	0.074	0.04	0.093	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**2.8**	3.848
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.039	0.02	*0.16*	<0.01	***0.31***	<0.01	<0.05	0.038	<0.02	<0.01	0.011	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.47*	0.578
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.12	*0.89*	0.05	***1.63***	<0.02	<0.1	0.25	0.05	0.02	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.52**	3.2
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.05	*0.42*	0.02	***0.62***	<0.02	<0.1	0.12	0.03	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.04*	1.36
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.16	*1.12*	0.06	***1.57***	<0.02	<0.1	0.34	0.06	0.04	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.69**	3.61
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.03	*0.21*	<0.02	***0.37***	<0.02	<0.1	0.05	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.58*	0.72
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.1	*0.79*	0.05	***1.09***	<0.02	<0.1	0.22	0.04	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.88*	2.5
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	0.07	*0.61*	0.04	***0.91***	<0.02	<0.1	0.17	0.03	<0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.52*	1.98
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.23	0.17	*1.59*	0.09	***2.66***	<0.02	0.1	0.25	0.04	0.03	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**4.25**	5.25
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	*0.11*	<0.02	***0.19***	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.3*	0.35
SW144	2/10/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.02	<0.01	0.07	<0.01	0.07	<0.01	<0.05	0.013	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.14*	0.173
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.02	<0.01	*0.099*	<0.01	*0.094*	<0.01	<0.05	0.016	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.193*	0.229
	5/08/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.021	<0.01	*0.1*	<0.01	*0.096*	<0.01	<0.05	0.018	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.196*	0.235
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.03	0.011	*0.073*	<0.01	0.064	<0.01	<0.05	0.014	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.137*	0.192
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.03	0.011	*0.074*	<0.01	*0.082*	<0.01	<0.05	0.013	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.156*	0.21
	3/02/2020	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	0.07	<0.01	*0.08*	<0.01	<0.05	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*0.15*	0.19
	13/05/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.06	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.13*	0.13
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	*0.09*	<0.02	*0.09*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.18*	0.21
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.06	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.13*	0.13
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.07	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.12*	0.12
	10/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	*0.08*	<0.02	*0.11*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.19*	0.21
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	*0.1*	<0.02	*0.09*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.19*	0.22
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	*0.09*	<0.02	*0.13*	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.22*	0.28
Remaining On-Base																															
SW113	12/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.026	<0.01	0.052	<0.01	0.054	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.165*	0.106
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.038	0.012	*0.1*	<0.01	0.065	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.106*	0.165
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.03	*0.19*	<0.02	***0.22***	<0.02	0.2	0.2	0.06	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.41*	1.03
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.02	*0.16*	<0.02	*0.1*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.26*	0.33
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	*0.14*	<0.02	*0.08*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.22*	0.26
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.02	*0.15*	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.2*	0.27
	10/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	*0.15*	<0.02	*0.09*	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.24*	0.3
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	*0.16*	<0.02	0.07	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.23*	0.36
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.05	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.1*	0.1
SW120	12/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.017	<0.01	0.06	<0.01	*0.087*	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.147*	0.147
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.02	*0.17*	<0.02	*0.12*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.29*	0.36
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.05	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.09*	0.11
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	*0.1*	<0.02	0.07	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.17*	0.22
Base Boundary																															
SW126	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	12/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.069	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.069
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW128	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.054	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.054
	16/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.028	<0.01	0.063	<0.01	*0.1*	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.163*	0.191
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.05	<0.02	*0.1*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.15*	0.15
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.03	*0.21*	<0.02	*0.13*	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.34*	0.49
	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.03	<0.02	<0.2	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.05
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.06	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.09*	0.09
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.06	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.13*	0.16
SW132	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.021	<0.01	*0.12*	<0.01	***0.51***	<0.01	<0.05	0.033	<0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.63*	0.694
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.023	0.011	*0.12*	<0.01	***0.8***	<0.01	<0.05	0.013	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.92*	0.967
	16/12/2018	<0.01	0.012	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.048	0.032	*0.28*	<0.01	***0.47***	<0.01	<0.05	0.057	<0.02	<0.01	0.016	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.75*	0.915
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.25	0.18	*1.5*	0.053	***1.5***	<0.01	0.12	0.27	0.062	0.034	0.079	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	**3**	4.048
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.036	0.019	*0.16*	<0.01	***0.28***	<0.01	<0.05	0.037	<0.02	<0.01	0.011	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.44*	0.543
	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.06	*0.38*	<0.02	***0.74***	<0.02	<0.1	0.09	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.12*	1.39
	1/04/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.24	0.2	*1.16*	0.06	***1.39***	<0.02	<0.1	0.27	0.06	0.04	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.55**	3.5
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.06	*0.41*	<0.02	***0.58***	<0.02	<0.1	0.09	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.99*	1.25
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.1	*0.82*	0.05	***1.2***	<0.02	<0.1	0.2	0.04	0.02	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**2.02**	2.63
	25/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.32	0.29	*2.52*	0.15	***2.96***	<0.02	0.1	0.48	0.06	0.05	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	**5.48**	7.07
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	*0.13*	<0.02	***0.23***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.36*	0.42
SW133	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.04	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.08*	0.08
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.04	*0.41*	<0.02	***0.26***	<0.02	<0.1	0.06	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.67*	0.87
	5/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01

AECOM

Table T8: Historical Surface Water
PFAS Analyical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005
NHMRC (2019) PFAS Recreational Water																							**10**							**2**	
PFAS NEMP 2020 Drinking Water* (HEPA, 2020)															*0.07*		*0.07*						*0.56*							*0.07*	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
SW134	29/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	1/04/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/04/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW135	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.011	<0.01	0.038	<0.01	0.07	<0.01	<0.05	0.012	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.108*	0.131
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.012	<0.01	0.037	<0.01	*0.072*	<0.01	<0.05	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.109*	0.121
	12/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.027	<0.01	*0.11*	<0.01	*0.1*	<0.01	<0.05	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.21*	0.237
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.041	0.011	*0.1*	<0.01	*0.13*	<0.01	<0.05	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.23*	0.282
	28/10/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	*0.16*	<0.02	***0.52***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.68*	0.76
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.18	0.13	*2.02*	0.09	***3.62***	<0.02	<0.1	0.25	0.05	0.03	0.07	<0.02	<0.02	0.05	<0.05	<0.02	<0.02	**5.64**	6.49
	22/06/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.08	*1.02*	0.05	***2.44***	<0.02	<0.1	0.08	<0.02	<0.02	0.03	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	**3.46**	3.86
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	*0.09*	<0.02	***0.19***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.28*	0.3
	1/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	*0.15*	<0.02	***0.25***	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.4*	0.46
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.21	0.12	*0.81*	0.03	***0.32***	<0.02	<0.1	0.28	0.06	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.13*	1.92
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.05	*0.32*	<0.02	***0.32***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.64*	0.78
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	*0.12*	<0.02	*0.09*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.21*	0.24
SW136	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.022	0.011	*0.094*	<0.01	0.07	<0.01	<0.05	0.026	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.164*	0.223
	10/12/2018	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.042	0.023	*0.12*	0.004	*0.077*	<0.001	0.023	0.036	0.008	0.003	0.006	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	*0.197*	0.343
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.023	0.011	*0.11*	<0.01	0.07	<0.01	<0.05	0.027	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.18*	0.241
	10/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	<0.01	*0.11*	<0.01	*0.083*	<0.01	0.052	0.043	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.193*	0.312
	14/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.025	0.011	*0.12*	<0.01	*0.1*	<0.01	<0.05	0.021	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.22*	0.277
	17/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	11/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.064	0.03	*0.32*	0.016	***0.69***	<0.01	0.064	0.05	<0.02	0.01	0.034	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*1.01*	1.278
	3/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.056	0.02	*0.22*	<0.01	***0.2***	<0.01	0.07	0.05	<0.02	<0.02	0.014	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	*0.42*	0.63
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	*0.16*	<0.02	***0.36***	<0.02	<0.1	0.05	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.52*	0.62
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	*0.1*	<0.02	***0.25***	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.35*	0.4
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	*0.31*	<0.02	***0.3***	<0.02	<0.1	0.07	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.61*	0.78
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	*0.14*	<0.02	***0.28***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.42*	0.48
Off-Base																															
SW203	8/12/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	0.025	-	*0.098*	<0.01	*0.13*	-	<0.05	0.014	<0.02	<0.01	0.012	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.228*	0.279
	26/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.041	0.015	*0.17*	<0.01	***0.15***	<0.01	<0.05	0.015	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.32*	0.391
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.078	0.053	*0.65*	0.033	***0.9***	<0.01	<0.05	0.087	<0.02	0.014	0.035	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*1.55*	1.85
	4/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.047	0.022	*0.18*	<0.01	***0.35***	<0.01	<0.05	0.044	<0.02	<0.01	0.014	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.53*	0.657
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.02	*0.19*	<0.02	***0.17***	<0.02	<0.1	0.04	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.36*	0.48
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.04	*0.31*	<0.02	***0.42***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.73*	0.93
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	0.05	*0.37*	<0.02	***0.36***	<0.02	<0.1	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.73*	0.92
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	*0.23*	<0.02	***0.3***	<0.02	<0.1	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.53*	0.65
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	*0.19*	<0.02	***0.21***	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.4*	0.51
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.09	*0.75*	0.05	***1.05***	<0.02	<0.1	0.16	0.03	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.8*	2.3
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.07	*0.4*	<0.02	***0.4***	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.8*	1.06
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	*0.14*	<0.02	***0.2***	<0.02	<0.1	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.34*	0.41
SW205	8/12/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	<0.01	-	<0.01	<0.01	<0.02	-	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	27/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.011	<0.01	0.011	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.057	0.071
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.014	<0.01	0.027	<0.01	0.03	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.011	0.022
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.01	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.05
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.13	<0.05	<0.13	<0.05	<0.13	<0.05	<0.13	<0.05	<0.05	<0.05	<0.05	*0.09*	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.13	<0.05	<0.05	*0.09*	0.09
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
SW211	30/11/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	0.015	-	0.032	<0.01	0.041	-	0.058	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.073*	0.146
	30/11/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	0.014	-	0.033	<0.01	0.047	-	0.058	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.08*	0.152
	17/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.031	<0.01	0.037	<0.01	0.035	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.072*	0.103
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.018	<0.01	0.019	<0.01	0.034	<0.01	<0.05	<0.01	<0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.053	0.081
	1/04/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.05
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.02	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.08
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.05	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.09*	0.11
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.06
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.06	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.09*	0.11
SW212	30/11/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	0.044	-	0.063	<0.01	0.06	-	0.11	0.021	0.022	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.123*	0.32
	17/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.079	0.022	*0.18*	<0.01	*0.1*	<0.01	<0.05	0.031	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.28*	0.432
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.036	0.01	*0.08*	<0.01	0.044	<0.01	0.062	0.013	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.124*	0.245
	1/04/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.06	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.08*	0.11
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	<0.02	0.04	<0.02	0.07	<0.02	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.11*	0.21
	3/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.08
	25/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	0.04	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.09
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.02	*0.18*	<0.02	*0.1*	<0.02	<0.1	0.05	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.28*	0.48
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	0.07

AECOM

Table T8: Historical Surface Water
PFAS Analyical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

Location ID	Sample Date	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005
NHMRC (2019) PFAS Recreational Water																							**10**							**2**	
PFAS NEMP 2020 Drinking Water* (HEPA, 2020)															*0.07*		*0.07*						*0.56*							*0.07*	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
SW217	17/12/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.017	<0.01	0.011	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	0.011	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.011	0.039
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
	2/11/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.03	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05	0.05
	19/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.04	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.09
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
SW220	30/11/2017	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	0.094	-	*0.51*	0.014	***0.45***	-	0.13	0.13	0.034	0.019	0.032	<0.01	<0.01	0.015	<0.02	<0.02	<0.01	*0.96*	1.428
	19/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.048	0.019	*0.28*	<0.01	***0.21***	<0.01	0.11	0.036	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.49*	0.703
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.07	0.04	*0.46*	<0.01	***0.27***	<0.01	<0.05	0.07	<0.02	<0.01	0.014	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.73*	0.924
	8/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.073	0.044	*0.47*	<0.01	***0.29***	<0.01	0.2	0.073	0.022	<0.01	0.014	<0.01	<0.01	0.01	<0.02	<0.02	<0.01	*0.76*	1.196
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	0.04	*0.38*	0.01	***0.22***	<0.01	<0.05	0.07	0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	*0.6*	0.8
	4/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.073	0.036	*0.42*	<0.01	***0.29***	<0.01	<0.05	0.055	<0.02	<0.01	0.014	<0.01	<0.01	0.012	<0.02	<0.02	<0.01	*0.71*	0.9
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.04	*0.37*	<0.02	***0.45***	<0.02	<0.1	0.08	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.82*	1.03
	1/04/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.12	0.09	*0.73*	0.03	***0.52***	<0.02	<0.1	0.14	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.25*	1.67
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.19	0.13	*1.23*	0.04	***0.54***	<0.02	<0.1	0.24	0.03	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.77*	2.46
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.11	*1.05*	0.04	***0.91***	<0.02	<0.1	0.19	<0.02	0.02	0.04	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	*1.96*	2.53
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	0.14	*1.34*	0.05	***0.74***	<0.02	<0.1	0.22	0.04	0.02	0.04	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	**2.08**	2.8
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	0.04	*0.36*	<0.02	***0.27***	<0.02	<0.1	0.06	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.63*	0.8
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.29	0.23	*1.77*	0.03	***0.97***	<0.02	<0.1	0.36	0.05	0.03	0.06	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	**2.74**	3.81
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	*0.19*	<0.02	***0.18***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.37*	0.44
SW227	24/01/2018	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	<0.01	-	<0.01	<0.01	<0.02	-	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	24/01/2018	-	<0.01	<0.01	-	<0.02	-	<0.05	<0.01	<0.02	-	<0.05	<0.01	-	<0.01	<0.01	<0.02	-	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.0014	0.012
	2/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0037	<0.001	0.0014	<0.001	<0.002	<0.001	0.0069	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.01	<0.01
	2/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0035	<0.001	0.0012	<0.001	<0.002	<0.001	0.007	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0012	0.0117
	2/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0036	<0.001	0.0012	<0.001	<0.002	<0.001	0.0071	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0012	0.0119
	7/08/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	28/02/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW232	19/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.018	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.018	0.018
	19/09/2018	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.016	<0.01	0.023	<0.01	0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.043	0.059
	19/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.01	<0.01	0.018	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.018	0.028
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	*0.09*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.09*	0.09
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.05	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.1*	0.13
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.05	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.09*	0.09
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07	0.09
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	<0.02	*0.11*	<0.02	*0.08*	<0.02	<0.1	0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.19*	0.25
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.05	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.09*	0.11
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.05	<0.02	0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.1*	0.1
SW233	19/09/2018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.058	0.025	*0.24*	<0.01	***0.26***	<0.01	0.055	0.032	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.5*	0.67
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.088	0.054	*0.5*	0.015	***0.58***	<0.01	<0.05	0.084	0.021	0.011	0.029	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*1.08*	1.382
	4/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.045	0.025	*0.19*	<0.01	***0.39***	<0.01	<0.05	0.049	<0.02	<0.01	0.016	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.58*	0.715
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.04	0.02	*0.18*	<0.02	***0.24***	<0.02	<0.1	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.42*	0.52
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.06	*0.44*	0.03	***0.69***	<0.02	<0.1	0.11	0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.13*	1.47
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	0.08	*0.57*	0.03	***0.61***	<0.02	<0.1	0.16	0.02	0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.18*	1.65
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	0.03	*0.27*	<0.02	***0.47***	<0.02	<0.1	0.05	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.74*	0.9
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	0.09	*0.68*	0.04	***0.68***	<0.02	<0.1	0.15	0.04	0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.36*	1.88
	6/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.1	*0.81*	0.05	***1.12***	<0.02	<0.1	0.2	0.03	0.02	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.93*	2.53
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	0.09	*0.53*	<0.02	***0.54***	<0.02	<0.1	0.16	0.02	<0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*1.07*	1.53
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	0.03	*0.23*	<0.02	***0.33***	<0.02	<0.1	0.04	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.56*	0.69
SW242	24/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.009	<0.001	0.012	<0.001	0.011	<0.001	0.01	0.0021	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.023	0.0441
	24/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0087	<0.001	0.012	<0.001	0.0095	<0.001	0.009	0.0019	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0215	0.0411
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	0.024	<0.01	0.061	<0.01	0.037	<0.01	<0.05	0.013	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	*0.098*	0.135
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.03	<0.02	0.07	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.13*	0.16
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.05	<0.02	*0.08*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.13*	0.13
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.06	<0.02	0.06	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.12*	0.12
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.02	*0.16*	<0.02	***0.25***	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.41*	0.49
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.06	<0.02	***0.34***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.4*	0.42
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.02	<0.02	0.05	<0.02	*0.12*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	*0.17*	0.19

AECOM

Table T8: Historical Surface Water
PFAS Analyical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

		4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFOS and PFHxS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005
NHMRC (2019) PFAS Recreational Water																							**10**							**2**	
PFAS NEMP 2020 Drinking Water* (HEPA, 2020)															*0.07*		*0.07*						*0.56*							*0.07*	
PFAS NEMP 2020 Interim Marine 95% (HEPA, 2020)																	***0.13***						***220***								
Location ID	**Sample Date**																														
SW243	24/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0044	<0.001	0.0036	<0.001	0.0023	<0.001	<0.005	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0059	0.0103
	24/08/2018	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.005	<0.001	0.004	<0.001	0.002	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.006	0.011
	24/08/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***7.8***	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**7.8**	7.8
	24/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0046	<0.001	0.0037	<0.001	0.0025	<0.001	<0.005	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0062	0.0108
	24/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0048	<0.001	0.0038	<0.001	0.0027	<0.001	0.0061	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0065	0.0174
	9/07/2019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	4/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	0.011	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.011	0.011
	4/02/2020	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	4/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	2/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01	0.01
	29/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	0.02
	16/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	2/03/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	0.03
	9/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.04	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	0.06
	21/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	4/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04	0.04
SW244	2/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0029	<0.001	0.0016	<0.001	<0.002	<0.001	0.0067	0.0014	0.0022	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0016	0.0148
	2/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	0.0036	<0.002	<0.002	<0.005	0.0029	<0.001	0.0012	<0.001	<0.002	<0.001	0.0063	0.0016	0.0024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0012	0.018
	2/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.003	<0.001	0.0012	<0.001	<0.002	<0.001	0.0071	0.0015	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	0.0012	0.0158
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	3/11/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	28/02/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
SW245	3/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0021	<0.001	<0.001	<0.001	<0.002	<0.001	<0.005	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.01	0.0021
	3/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	0.0022	<0.001	<0.001	<0.001	<0.002	<0.001	0.0053	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.01	0.0075
	3/08/2018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	0.0023	<0.002	<0.002	<0.005	0.0021	<0.001	<0.001	<0.001	<0.002	<0.001	<0.005	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.01	0.0044
	4/02/2020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01
	3/11/2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	26/03/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	18/08/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	28/02/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	8/03/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	22/08/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
	7/03/2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01

	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFHxS and PFOS	Sum of PFAS
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002
Eastern PFAS Contamination Area																														
SD119	16/12/2018	<0.001	0.0089	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	0.0029	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	0.0118
	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0027	0.0032	0.0211	0.0006	0.0122	<0.0002	<0.001	0.0046	0.0008	0.0006	0.0011	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0333	0.0469
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0018	0.0017	0.0153	0.0008	0.0212	<0.0002	0.001	0.0051	0.001	0.0009	0.0018	<0.0002	<0.0002	0.0008	<0.0005	<0.0002	<0.0002	0.0365	0.0514
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0006
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0007	0.0007	0.0023	<0.0002	0.0018	<0.0002	<0.001	0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0041	0.0063
	10/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0021	<0.0002	0.0031	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0052	0.0055
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0018	0.0028	0.0321	0.0011	0.035	<0.0002	<0.001	0.0034	0.0006	0.0005	0.002	<0.0002	<0.0002	0.0019	<0.0005	<0.0002	<0.0002	0.0671	0.0812
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0011	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014	0.0014
SD121	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0008	0.0008	0.0104	0.0007	0.0461	<0.0002	<0.001	0.002	0.0002	0.0003	0.0016	0.0004	0.0005	0.0042	<0.0005	<0.0002	0.0012	0.0692	0.0565
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0002	0.0002	0.0034	0.0004	0.0198	<0.0002	<0.001	0.001	0.0003	<0.0002	0.0004	0.0003	0.0007	0.0005	<0.0005	<0.0002	0.0005	0.0277	0.0232
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0007	0.0012	0.0097	0.0004	0.0097	<0.0002	<0.001	0.0018	0.0003	0.0002	0.0006	<0.0002	<0.0002	0.0003	<0.0005	<0.0002	<0.0002	0.0194	0.0249
	22/04/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	0.0002	0.0052	0.0002	0.0043	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0095	0.0099
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0008	0.0008	0.0082	0.001	0.0541	<0.0002	<0.001	0.0021	0.0003	0.0003	0.002	<0.0002	<0.0002	0.0015	<0.0005	<0.0002	0.0003	0.0623	0.0714
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0025	0.0018	0.0222	0.0014	0.0963	<0.0002	<0.001	0.0027	<0.0002	0.0003	0.0013	0.0002	<0.0002	0.0024	<0.0005	<0.0002	<0.0002	0.118	0.131
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0016	<0.0002	0.0055	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0071	0.0073
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	<0.0002	0.0032	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0038	0.0038
Former Fire Station																														
SD109	16/12/2018	<0.001	<0.005	0.0023	<0.002	<0.002	<0.002	<0.005	0.0026	<0.002	<0.002	<0.005	<0.001	<0.001	0.0086	<0.001	0.12	<0.001	0.0065	0.0019	<0.002	<0.001	0.0011	<0.001	0.002	<0.001	<0.002	0.0049	<0.002	0.1286	0.1499
	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.001	0.0009	0.0067	0.0007	0.0307	<0.0004	<0.001	0.002	0.0005	0.0003	0.0007	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0374	0.0435
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.0021	<0.0005	<0.0002	<0.0005	0.0008	0.0009	0.009	0.001	0.079	0.0027	<0.001	0.0026	0.0005	0.0005	0.001	<0.0002	0.0002	<0.0002	<0.0005	0.0004	0.0004	0.088	0.1011
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0002	<0.0006	0.0031	<0.0006	<0.0002	<0.0006	0.0004	0.0005	0.0054	0.0009	0.122	0.0018	<0.001	0.0014	0.0006	0.0005	0.0008	<0.0002	0.0004	0.0003	<0.0006	0.0007	0.0005	0.127	0.139
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0002	<0.0006	0.0072	<0.0006	<0.0002	<0.0006	0.0055	0.0063	0.0635	0.0051	0.253	0.0017	<0.002	0.0153	0.0029	0.0021	0.0076	<0.0002	<0.0002	0.0005	<0.0006	0.0005	<0.0004	0.371	0.316
	22/08/2022	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0002	<0.0005	0.0048	<0.0005	<0.0002	<0.0005	0.0031	0.003	0.0297	0.0047	0.566	0.0035	<0.001	0.0071	0.0019	0.0011	0.005	<0.0002	0.0003	0.0007	<0.0005	0.0007	0.0004	0.596	0.633
	6/03/2023	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.0025	0.0056	<0.0025	<0.001	<0.0025	0.0024	0.002	0.033	0.0046	0.377	<0.001	<0.005	0.0059	<0.001	<0.001	0.0032	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.001	0.41	0.434
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	0.0005	<0.0012	0.0039	<0.0012	<0.0005	<0.0012	0.012	0.0134	0.124	0.0108	0.458	0.0015	<0.002	0.028	0.006	0.0042	0.0109	<0.0005	<0.0005	0.0008	<0.0012	0.0007	<0.0005	0.582	0.675
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.0012	<0.0005	<0.0002	<0.0005	0.0008	0.0008	0.0095	0.0009	0.05	0.0006	<0.001	0.0019	0.0003	0.0003	0.0008	<0.0002	<0.0002	<0.0002	<0.0005	0.0003	<0.0002	0.0595	0.0674
SD110	14/12/2018	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	0.0012	0.014	0.0014	0.17	<0.001	0.0046	0.0027	<0.002	<0.001	0.0015	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.184	0.1954
	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	0.0081	0.0064	0.0319	<0.0005	0.0098	<0.0005	<0.002	0.0131	0.0033	0.0018	0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0417	0.0756
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0016	0.0002	0.0074	<0.0002	<0.001	0.0006	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.009	0.01
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.0003	<0.0005	<0.0002	<0.0005	0.0013	0.0012	0.0091	0.001	0.0542	0.0005	<0.001	0.0021	0.0005	0.0003	0.0008	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	0.0002	0.0633	0.0715
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.0012	<0.0005	<0.0002	<0.0005	0.0012	0.0015	0.0168	0.0024	0.161	0.0013	<0.001	0.0027	0.0005	0.0003	0.0017	<0.0002	<0.0002	0.0003	<0.0005	<0.0002	0.0003	0.191	0.178
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0009	<0.0004	<0.0009	0.001	<0.0009	<0.0004	<0.0009	0.0011	0.0006	0.0068	0.0008	0.078	0.001	<0.002	0.0012	<0.0004	<0.0004	0.0008	<0.0004	0.0004	0.0004	<0.0009	0.0006	0.0006	0.0848	0.0933
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0018	0.0003	0.013	<0.0002	<0.001	0.0004	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0148	0.0157
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	0.0027	<0.0012	<0.0005	<0.0012	0.002	0.0024	0.0334	0.0057	0.669	0.0009	<0.002	0.0047	0.0009	0.001	0.0034	<0.0005	<0.0005	0.0007	<0.0012	0.0006	0.0006	0.702	0.728
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0015	<0.0002	0.0245	0.0012	<0.001	0.0004	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0003	0.0002	0.026	0.0283
Lavarack Golf Course and Sporting Fields																														
SD129	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007	0.0007
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0002	<0.0002	0.0003	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0014
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014	0.0014
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0005	0.0004	0.0063	0.0005	0.005	<0.0002	<0.001	0.0004	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0113	0.0135
	8/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0006
SD130	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	0.0021	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0021	0.0021
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0083	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.0005	<0.0004	0.0002	0.0095	0.0095
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0011	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0011	0.0011
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0012
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018	0.0018
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0034	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0034	0.0034
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0012	<0.0002	<0.0002	<0.0002	0.0062	<0.0002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0012	<0.0005	<0.0005	0.007	0.007
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	<0.0002	0.0047	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0053	0.0056
SD133	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007	0.0007
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.001	0.001
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007	0.0007
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0006
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.002	0.002
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0011	<0.0002	0.0112	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	0.0006	0.0123	0.0129
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0024	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0024	0.0024
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
SD134	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	1/04/2021	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	0.0018	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	0.0018	0.0018
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0009
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0012
	22/08/2023	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0002	<0.0025	<0.001	<0.0005	<0.0002	<0.0025	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.0002	<0.0025	<0.001	<0.001	<0.0002	0.0003
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002

AECOM

Table T9: Historical Sediment PFAS Anlaytical Results

Project Name: PFAS OMP Lavarack Barracks
Sampling Event Factual Report
March 2024

	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFHxS and PFOS	Sum of PFAS
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002
Location ID	**Sample Date**																													
Top, Middle and Lower Dams																														
SD139	2/10/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0022	<0.001	0.02	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0222	0.0222
	29/10/2020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0010	0.0024	<0.0010	0.0227	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	0.0251	0.0251
	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	0.0023	<0.0005	0.0181	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0204	0.0204
	29/10/2020	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0071	<0.001	0.041	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0481	0.0481
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0005	0.0005	0.0069	0.0013	0.0825	0.0004	<0.001	0.0008	<0.0002	<0.0002	0.0005	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	0.0004	0.0894	0.094
	16/08/2021	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.001	0.0044	<0.001	0.0468	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.001	0.0512	0.0512
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0002	0.0003	0.0057	0.0015	0.0705	0.0004	<0.001	0.0004	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0794	0.0762
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0004	<0.0010	<0.0004	<0.0010	<0.0004	<0.0010	0.0005	<0.0004	0.0049	0.0006	0.0635	0.0004	<0.002	0.0009	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0010	<0.0004	<0.0004	0.0684	0.0708
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0039	0.0042	0.033	0.0024	0.0682	0.0003	<0.001	0.0047	0.0008	0.0003	0.0017	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.101	0.12
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0022	<0.0002	0.0134	<0.0002	<0.001	0.0006	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0156	0.0164
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0007	0.0009	0.0182	0.0055	0.148	0.0004	<0.001	0.0011	0.0002	0.0003	0.0017	0.0002	<0.0002	0.0003	<0.0005	<0.0002	<0.0002	0.166	0.178
SD140	3/10/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0015	<0.001	0.04	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0415	0.0415
	3/10/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0016	<0.001	0.033	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0346	0.0346
	3/10/2018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00066	<0.0005	0.015	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.01566	0.01566
	5/08/2019	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0018	<0.001	0.03	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0318	0.0318
	5/08/2019	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0015	<0.001	0.017	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0185	0.0185
	5/08/2019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0009	<0.0005	0.015	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0159	0.0159
	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	0.0002	0.0024	0.0002	0.0216	0.0003	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.024	0.025
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	0.0002	0.0039	0.0006	0.0508	0.0011	<0.001	0.0006	0.0003	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0003	0.0003	0.0547	0.0582
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0002	0.0002	0.0027	0.0004	0.0222	0.0004	<0.001	0.0004	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0249	0.0267
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0167	0.0005	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0184	0.0179
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.001	<0.0002	0.017	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.018	0.018
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0002	<0.0006	<0.0002	<0.0006	0.0002	<0.0005	0.0004	<0.0002	0.0026	0.0003	0.0364	0.0006	<0.001	0.0004	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0008	0.039	0.0412
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0003	<0.0003	0.0041	<0.0004	0.0316	<0.0002	<0.001	0.0005	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0357	0.0364
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0018	<0.0002	0.009	0.0002	<0.001	0.0004	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0108	0.0116
SD144	13/05/2021	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.001	0.0054	0.0013	0.356	0.0013	<0.005	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.001	0.365	0.361
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0058	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.006	0.006
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0002	<0.0006	<0.0002	<0.0006	<0.0002	<0.0009	<0.0002	<0.0002	0.0024	<0.0002	0.0325	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0002	0.0349	0.0349
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	<0.0002	0.0201	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0205	0.0205
	10/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0006	0.0008	0.009	0.003	0.264	0.0009	<0.001	0.001	0.0002	<0.0002	0.0012	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.273	0.281
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0114	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0126	0.0126
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0005	<0.0002	0.0023	0.0003	0.0393	0.0003	<0.001	0.0004	0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0416	0.0436
Remaining On-Base																														
SD113	12/12/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	28/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0012
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0011	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0011	0.0011
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	10/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	0.0008
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	0.0008
SD120	12/12/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	28/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.002	<0.002
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0014	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014	0.0014
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0034	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0037	0.0037
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0006
	3/09/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0019	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0019	0.0019
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	<0.0002	0.0037	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0042	0.0042
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009
Base Boundary																														
SD126	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0034	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0002	0.0003	0.0036	0.0041
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0006
SD128	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.001	0.001
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	<0.0002	0.004	0.001	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0005	<0.0003	<0.0002	0.0044	0.0054
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0004	<0.0002	0.0007	<0.0002	0.0034	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0041	0.0045
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0014	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0017	0.0017
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0026	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0029	0.0029
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	<0.0002	0.0125	0.0003	<0.001	0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0131	0.0138
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0034	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0037	0.0039
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	<0.0002	0.0141	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0145	0.0145

	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFHxS and PFOS	Sum of PFAS
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002
Location ID	**Sample Date**																													
SD132	16/12/2018	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	0.02	<0.001	0.0054	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.02	0.0254
	29/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0031	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0039	0.0039
	1/04/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	<0.0002	0.0033	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0037	0.0037
	22/04/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0048	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.005	0.005
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0004	0.0002	0.0025	<0.0002	0.0108	0.0004	<0.001	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0133	0.0147
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0094	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0102	0.0105
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0036	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0044	0.0044
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0019	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0019	0.0019
SD135	12/12/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	28/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	<0.0002	0.0025	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0031	0.0031
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009
	1/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0012
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0014	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014	0.0014
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0014	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0026	0.0029
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.001	0.001
SD136	17/12/2018	<0.001	0.0092	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	0.04	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	0.0492
	28/10/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018	0.0018
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0051	<0.0002	<0.001	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0059	0.0064
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0015	<0.0002	0.0107	<0.0002	<0.001	0.0005	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0122	0.0129
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	0.0008
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0075	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0083	0.0083
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	0.0006
	25/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
Off-Base																															
SD203	28/11/2017	-	<0.001	<0.001	-	<0.002	-	<0.005	<0.001	<0.002	-	<0.005	<0.001	-	0.0012	<0.001	0.012	-	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0132	0.0132
	26/09/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	0.0024	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0024	0.0024
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	<0.0002	0.0026	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0031	0.0031
	19/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	0.0002
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0084	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0096	0.0098
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0015	0.0015
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
SD205	28/11/2017	-	<0.001	<0.001	-	<0.002	-	<0.005	<0.001	<0.002	-	<0.005	<0.001	-	<0.001	<0.001	<0.002	-	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.0002	<0.0002
	27/09/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.0002	<0.0002
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.007	0.0007
	19/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0017	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0019	0.0021
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	0.0008
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0026	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0026	0.0026
SD211	30/11/2017	-	<0.001	<0.001	-	<0.002	-	<0.005	<0.001	<0.002	-	<0.005	<0.001	-	<0.001	<0.001	<0.002	-	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.0002	<0.0002
	1/04/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	0.0015	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0008	<0.0005	<0.0012	<0.0005	<0.0005	0.0015	0.0015
	19/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	3/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	25/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.001	0.001
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	7/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	0.001
SD212	1/04/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005	0.0005
	19/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	0.0002
	3/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	25/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	7/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD217	17/12/2018	<0.001	0.0028	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	0.0023	<0.001	0.0086	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0023	0.0137
	17/12/2018	<0.001	<0.005	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	0.011	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.003	0.014
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0008	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.002
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	0.001
	2/11/2020	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.001	<0.002
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0011	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0011	0.0011
	19/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0002	<0.0002	0.0002	<0.0002	0.0018	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.002	0.0022
	6/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0012
	21/08/2023

	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	EtFOSA	EtFOSAA	EtFOSE	FOSA	MeFOSA	MFOSAA	MeFOSE	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFHxA	PFPeA	PFHpA	PFOA	PFDA	PFDoDA	PFNA	PFTeDA	PFTrDA	PFUnDA	Sum of PFHxS and PFOS	Sum of PFAS
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002
Location ID	**Sample Date**																													
SD220	19/09/2018	<0.001	0.0011	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	0.0036	<0.001	0.024	<0.001	0.0039	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	0.0276	0.0326
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0025	<0.0002	0.013	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0155	0.0158
	1/04/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0013	<0.0005	<0.0013	<0.0005	<0.0013	<0.0005	<0.0005	0.0068	0.0024	0.0963	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	0.1031	0.1055
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0011	0.0007	0.0074	0.0008	0.0336	<0.0002	<0.001	0.0009	<0.0002	0.0002	0.0003	<0.0002	0.0004	0.0006	<0.0005	0.0002	0.0003	0.041	0.0465
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	<0.0002	0.0042	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.005	0.005
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0005	0.0003	0.0062	0.0005	0.0228	<0.0002	<0.001	0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0005	<0.0002	<0.0002	0.029	0.0317
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0056	0.001	0.0166	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0222	0.0235
	21/08/2023	<0.001	<0.001	<0.001	<0.001	<0.0024	<0.001	<0.0024	<0.0002	<0.0024	<0.001	<0.0024	0.0004	0.0004	0.0059	0.0003	0.0192	<0.0002	<0.001	0.0011	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	0.0003	<0.0005	<0.001	<0.001	0.0251	0.0276
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0003	0.0002	0.0061	0.0002	0.005	<0.0002	<0.001	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0111	0.0122
SD227	24/01/2018	-	<0.001	<0.001	-	<0.002	-	<0.005	<0.001	<0.002	-	<0.005	<0.001	-	<0.001	<0.001	<0.002	-	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	2/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	2/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	2/08/2018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002
	7/08/2019	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	0.0022	<0.005	<0.001	<0.001	<0.001	<0.001	0.014	<0.001	<0.002	0.002	<0.002	0.0015	0.01	0.018	0.0046	0.0017	<0.002	<0.002	<0.002	0.014	0.054
	3/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.002
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.002
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	28/02/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	22/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	7/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD232	19/09/2018	<0.001	0.0011	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.0002	0.0011
	19/09/2018	<0.001	0.002	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.0002	0.002
	19/09/2018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00055	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	0.00055
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0023	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0025	0.0025
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0018	<0.0002	<0.001	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018	0.0026
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0018	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018	0.0018
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0007	<0.0002	0.0007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014	0.0014
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012	0.0012
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0032	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0035	0.0035
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0007	<0.0002	0.0025	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0032	0.0034
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008	0.0008
SD233	19/09/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0022	0.0022
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0023	0.0003	0.0267	<0.0002	<0.001	0.0005	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.029	0.03
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0011	<0.0002	0.0104	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0115	0.0115
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.001	<0.0002	0.0071	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0081	0.0081
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.002	<0.0002	0.0184	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0204	0.021
	15/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0003	0.0002	0.0022	<0.0002	0.0084	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0106	0.0111
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0003	0.0003	0.0028	0.0004	0.0206	0.0003	<0.001	0.0003	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0234	0.0253
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	0.0002	0.004	0.0002	0.0163	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0203	0.0209
SD242	24/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.001	0.001
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0034	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.0005	<0.0002	0.0002	0.0034	0.0042
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0023	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0023	0.0023
	22/04/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0002	<0.0002	0.0051	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0005	<0.0002	<0.0002	0.0053	0.0057
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.001	0.001
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0006	<0.0002	0.0054	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.006	0.006
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0047	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0047	0.0047
SD243	24/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	24/08/2018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002
	24/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	0.01	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	0.01
	2/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.002
	29/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009	0.0009
	16/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	2/03/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	0.0003
	22/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	9/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004	0.0004
	21/08/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	4/03/2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
SD244	2/08/2018	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	3/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.002
	3/11/2020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.002
	3/11/2020	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.001	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
	26/03/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.002
	18/08/2021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	28/02/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	23/08/2022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
	8/03/2023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0

Appendix C

Data Validation

DATA VALIDATION REPORT					
Project No.:	60612487	**Validation by:** [redacted]		**Date:**	02/04/2024
Client:	Department of Defence				
Site:	Lavarack Barracks (0229)				
Matrix type:	Groundwater, surface water, sediment	**Data verified by:** [redacted]		**Date:**	03/04/2024
No. of primary samples:	38 groundwater, 30 surface water, 30 sediment (March 2024)				
Laboratory:	ALS (Brisbane), Eurofins (Brisbane)	**Project Manager:** [redacted]		**Date:**	04/04/2024
Lab reference:	ET2401536, ET2401537, ET2401538, ET2401539, ET2401603, 1076794				
Key Issues:	No QA/QC issues were identified in the field or laboratory datasets that could have a material implication on data interpretation and therefore decision-making on the project. The data are considered appropriate for use to meet the project objectives.				
Field QA/QC					
Sampling personnel	Sampling was conducted by AECOM personnel from 4 March to 8 March 2024. Well gauging was completed on 12 March 2024.				
Sampling Methodology	Groundwater, surface water and sediment samples were collected using appropriate methods as identified within the main body of the report. Hydrasleeves were installed in the well for a minimum of 24 hours prior to collection. Surface water samples were collected from immediately below the water surface. Sediment samples were collected from within the water body, where possible.				
Chain of Custody (COC)	COC documents were completed as per AECOM procedures.				
Rinsate Blank	Rinsate samples were collected following decontamination of non-dedicated equipment, per field team at a rate of one per day of sampling, (ten in total). Concentrations of all analytes tested were reported below the LOR for rinsate samples, except for: • 0229_QC302_240307 in batch ET2401539 which reported PFOS at 0.02µg/L (LOR of 0.01µg/L). The detection of PFOS is comparable to the LOR and the groundwater samples collected on this day reported similar results to the historical dataset, the detection of PFOS in the rinsate is unlikely to impact on the interpretation of the results (refer **Table C1** attached).				
Trip Blanks	Trip blanks were included at a rate of one per batch of samples (six in total). Concentrations were reported below the LOR (Refer **Table C1** attached).				
Eskies to Laboratory	A total of four eskies of samples were submitted to ALS and one esky was submitted to Eurofins across the March 2024 sampling event. Multiple batches were submitted within the one esky resulting in six trip blanks being submitted for analysis.				

Frequency of field QC	Field duplicates (intra-laboratory duplicates) and triplicates (inter-laboratory duplicates) were collected at a target frequency of one in ten primary samples. Target frequencies were met with the following frequency: • Four duplicates and triplicates for groundwater (10.53%). • Three duplicates and triplicates for surface water (10.00%). • Three duplicates and triplicates for sediment (10.00%).
Handling and preservation	Primary, duplicate, and triplicate samples were received, preserved, and chilled at the laboratory. Sample receipt temperature was reported between 4.1°C and 7.0°C by the primary laboratory with attempt to chill evident. One batch submitted to the primary laboratory containing rinsate and trip blank samples was received at 24.9°C. These samples were delivered chilled to the laboratory in Townsville on 13 March and were logged in Brisbane on 15 March. Given the type of samples, it is unlikely the high temperature would have any material impact on results and interpretation as is evidenced by all results being reported less than the LOR. The receiving temperature recorded by the secondary laboratory was reported as 7.4°C, an attempt to chill was recorded and the samples were noted as being received in good condition. All samples were received at the laboratory in appropriate sample containers with no sample container / preservation non-compliances noted. Upon receipt at the laboratory the samples were chilled prior to analysis.
Equipment Calibration	Calibration of the water quality meter was conducted each day before sampling, see **Appendix F**.
Laboratory QA/QC	
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Holding time compliance	Samples were extracted and analysed within recommended holding times.
Laboratory Accreditation	The laboratory analysis was conducted by ALS Environmental Pty Ltd (Brisbane) a National Association of Testing Authorities (NATA) accredited laboratory. The triplicate samples were analysed at Eurofins Environmental Testing Australia Pty Ltd (Brisbane), also a NATA accredited laboratory.
Frequency of laboratory QC	The laboratory reported sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, except for: • Laboratory duplicates were below the expected rate of 10% for PFAS in batches ET2401536 (8.33%), ET2401537 (8.33%), ET2401538 (9.68%), ET2401539 (7.35%), and ET2401603 (0.00%). • Matrix spikes were below the expected rate of 5% for PFAS in batch ET2401603 as no matrix spike analysis was performed. For all other quality control requirements, including laboratory control samples and method blanks, target frequency was met.
Method Blank	No method blank outliers occurred. All analytes were found to be below LOR in method blanks.
Laboratory duplicate RPDs	No duplicate outliers occurred. Laboratory duplicate Relative Percentage Differences (RPD) were within control limits.
Laboratory control spike (LCS) recovery	All LCS recoveries were reported within acceptable limits.

Matrix spike recovery	All matrix spike (MS) recoveries were within control limits, except: • Sample 0229_SD109_240304 in ET2401539, where recovery was less than lower data quality objective for PFPeS, PFNA, FOSA, EtFOSAA, 8:2 FTS, and 10:2 FTS; and MS recovery could not be determined for PFHxS and PFOS due to the background level reported at greater than or equal to four times the spike level. • Sample 0229_MW065_240308 in ET2401539, where MS recovery could not be determined for PFHxS and PFOS due to the background level reported at greater than or equal to four times the spike level. • Sample 0229_MW115_240308 in ET2401539 and analysed with batches ET2401536, ET2401537 and ET2401538, where recovery was less than lower data quality objective for PFBA. High concentrations of PFHxS and PFOS consistent with historical results were reported in samples 0229_SD109_240304 and 0229_MW065_240308 which affected matrix spike recovery for these analytes. Where the recovery was less than the lower data quality objective for samples 0229_SD109_240304 and 0229_MW115_240308, it is possible that results have been under reported for these analytes; comparing results to historical records shows no indication of erroneous results.
Surrogate spike recovery	No surrogate spike recovery outliers occurred.
QA/QC Data Evaluation	
Comparison of Field Observations and Laboratory Results	No anomalous results between field observations and analysis results were noted.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by AECOM.
Limits of reporting	Limit of Reporting (LOR) values were adjusted for in laboratory batch ET2401539 for the following samples: • 0229_SD245_240307: Diluted due to high moisture content, LORs adjusted accordingly. • 0229_MW128_240307: LOR raised due to matrix interference. This is likely due to the high concentrations of PFHxS and PFOS in the sample. The adjusted LORs were sufficiently low to enable assessment against adopted screening levels (where relevant) in these samples.
Field duplicate RPDs	Field duplicate RPDs were all reported within control limits (Refer **Table C2 and Table C3** attached).
Field triplicate RPDs	Field triplicate RPDs were all reported within control limits (Refer **Table C2 and Table C3** attached).

Table C1 - Field Blanks

	Lab Report Number	ET2401539	ET2401539	ET2401539	ET2401539	ET2401538	ET2401538	ET2401538	ET2401538	ET2401603	ET2401603	1076794	ET2401539
	Field ID	0229_QC300_240305	0229_QC301_240307	0229_QC302_240307	0229_QC303_240308	0229_QC350_240304	0229_QC351_240304	0229_QC352_240305	0229_QC353_240307	0229_QC354_240312	0229_QC355_240312	0229_QC500_240308	0229_QC501_240308
	Date	5/03/2024 18:04	7/03/2024 13:10	7/03/2024 16:25	8/03/2024 11:46	4/03/2024 16:42	4/03/2024 16:46	5/03/2024 19:00	7/03/2024 13:20	12/03/2024 16:29	12/03/2024 16:41	8/03/2024	8/03/2024 17:00
	Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Trip_B	Trip_B
ChemName	**Units**	**EQL**											
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1
Perfluorodecanoic acid (PFDA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Perfluorodecane sulfonic acid (PFDS)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoropentanoic acid (PFPeA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Perfluorononanoic acid (PFNA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	**0.02**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	**0.02**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS	µg/L	0.01	<0.01	<0.01	**0.02**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	

Table C1 - Field Blanks

Lab Report Number	ET2401537	ET2401536	ET2401538	ET2401603
Field ID	0229_QC502_240308	0229_QC503_240308	0229_QC550_240304	0229_QC551_240312
Date	8/03/2024 17:00	8/03/2024 17:00	4/03/2024 10:00	12/03/2024 16:43
Sample Type	Trip_B	Trip_B	Trip_B	Trip_B

ChemName	Units	EQL				
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.01	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid (PFBA)	µg/L	0.05	<0.1	<0.1	<0.1	<0.1
Perfluorodecanoic acid (PFDA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02
Perfluorodecane sulfonic acid (PFDS)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Perfluoropentanoic acid (PFPeA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	<0.05	<0.05	<0.05	<0.05
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	µg/L	0.01	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01

C2 - Water Duplicates and Triplicates

	Lab Report Number	ET2401539	ET2401539	RPD	1076794	RPD	ET2401539	ET2401539	RPD	1076794	RPD	ET2401539	ET2401539	RPD	1076794	RPD
	Field ID	0229_SW113_240304	0229_QC100_240304		0229_QC200_240304		0229_SW126_240304	0229_QC102_240304		0229_QC202_240304		0229_MW141_240307	0229_QC104_240307		0229_QC204_240307	
	Date	4/03/2024	4/03/2024		4/03/2024		4/03/2024	4/03/2024		4/03/2024		7/03/2024	7/03/2024		7/03/2024	
	Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
ChemName	**Units**	**EQL**														
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	0.02	0	0.02	0	<0.02	<0.02	0	0.01	0	0.09	0.1	11	0.08	12
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorodecane sulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.02	<0.02	0	0.02	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.02	0	<0.02	<0.02	0	<0.01	0	0.1	0.1	0	0.11	10
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.05	0.06	18	0.07	33	<0.01	<0.01	0	<0.01	0	0.52	0.5	4	0.52	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	0.02	0	0.03	40
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.06	0.06	0	0.06	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	0.05	0.05	0	0.05	0	<0.01	<0.01	0	<0.01	0	0.28	0.31	10	0.24	15
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	<0.01	0	0.02	0.02	0	0.02	0
Sum of PFHxS and PFOS	µg/L	0.01	0.1	0.11	10	0.12	18	<0.01	<0.01	0	<0.01	0	0.8	0.81	1	0.76	5
Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	0.1	0.13	26	0.16	46	<0.01	<0.01	0	<0.1	0	1.09	1.11	2	1.1	1

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

C2 - Water Duplicates and Triplicates

	Lab Report Number	ET2401539	ET2401539	RPD	1076794	RPD	ET2401539	ET2401539	RPD	1076794	RPD	ET2401538	ET2401538	RPD	1076794	RPD
	Field ID	0229_MW124_240308	0229_QC105_240308		0229_QC205_240308		0229_MW002_240308	0229_QC106_240308		0229_QC206_240308		0229_SW217_240304	0229_QC150_240304		0229_QC250_240305	
	Date	8/03/2024	8/03/2024		8/03/2024		8/03/2024	8/03/2024		8/03/2024		4/03/2024	4/03/2024		4/03/2024	
	Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
ChemName	**Units**	**EQL**														
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0	<0.02	<0.02	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.08	0.07	13	0.08	0	<0.02	<0.02	0	<0.01	0
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorodecane sulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.04	0.04	0	0.04	0	<0.02	<0.02	0	<0.01	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.08	0.08	0	0.12	40	<0.02	<0.02	0	<0.01	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	0	<0.01	0	0.89	0.81	9	1.2	30	<0.01	0.01	0	<0.01	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	0.02	0	<0.02	<0.02	0	<0.01	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.05	0.05	0	0.07	33	<0.02	<0.02	0	<0.01	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.02	<0.02	0	0.01	67	<0.02	<0.02	0	<0.01	0
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.04	0.04	0	0.04	0	<0.02	<0.02	0	<0.01	0
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	0	0.02	67	1.87	1.81	3	2.4	25	0.01	0.01	0	0.02	67
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	0	0.03	0.03	0	0.04	29	<0.01	<0.01	0	<0.01	0
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	0	0.02	67	2.76	2.62	5	3.6	26	0.01	0.02	67	0.02	67
Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.1	0	3.1	2.93	6	4.05	27	0.01	0.02	67	<0.1	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

C2 - Water Duplicates and Triplicates

Lab Report Number	ET2401538	ET2401538		1076794	
Field ID	0229_MW217_240307	0229_QC152_240307	**RPD**	0229_QC252_240307	**RPD**
Date	7/03/2024	7/03/2024		7/03/2024	
Sample Type	Primary	Duplicate		Triplicate	
ChemName	**Units**	**EQL**				
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.05	<0.05	<0.05	0	<0.05	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02 : 0.05 (Interlab)	<0.02	<0.02	0	<0.05	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.02	0
Perfluorobutanoic acid (PFBA)	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0
Perfluorodecanoic acid (PFDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
Perfluorodecane sulfonic acid (PFDS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
Perfluorohexanoic acid (PFHxA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	0	<0.01	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
Perfluorononanoic acid (PFNA)	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	0	<0.01	0
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	0
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	0	<0.01	0
Sum of PFAS	µg/L	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.1	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

C3 - Sediment Duplicates and Triplicates

Lab Report Number			ET2401539	ET2401539		1076794		ET2401539	ET2401539		1076794		ET2401538	ET2401538		1076794	
Field ID			0229_SD113_240304	0229_QC101_240304	**RPD**	0229_QC201_240304	**RPD**	0229_SD126_240304	0229_QC103_240304	**RPD**	0229_QC203_240304	**RPD**	0229_SD217_240304	0229_QC151_240304	**RPD**	0229_QC251_240305	**RPD**
Date			4/03/2024	4/03/2024		4/03/2024		4/03/2024	4/03/2024		4/03/2024		4/03/2024	4/03/2024		4/03/2024	
Sampled Date/Time			Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
ChemName	**Units**	**EQL**															
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	mg/kg	0.0005 : 0.01 (Interlab)	<0.0005	<0.0005	0	<0.01	0	<0.0005	<0.0005	0	<0.01	0	<0.0005	<0.0005	0	<0.01	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.0002 : 0.01 (Interlab)	<0.0002	<0.0002	0	<0.01	0	<0.0002	<0.0002	0	<0.01	0	<0.0002	<0.0002	0	<0.01	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	mg/kg	0.0002 : 0.01 (Interlab)	<0.0002	<0.0002	0	<0.01	0	<0.0002	<0.0002	0	<0.01	0	<0.0002	<0.0002	0	<0.01	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorobutanoic acid (PFBA)	mg/kg	0.001 : 0.005 (Interlab)	<0.001	<0.001	0	<0.005	0	<0.001	<0.001	0	<0.005	0	<0.001	<0.001	0	<0.005	0
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorodecane sulfonic acid (PFDS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	0.0005	0.0006	18	<0.005	0
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorononanoic acid (PFNA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.0002 : 0.005 (Interlab)	0.0008	0.001	22	<0.005	0	0.0006	0.0006	0	<0.005	0	0.0027	0.003	11	<0.005	0
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0002 : 0.005 (Interlab)	<0.0002	<0.0002	0	<0.005	0	<0.0002	<0.0002	0	<0.005	0	0.001	0.0007	35	<0.005	0
Sum of PFHxS and PFOS	mg/kg	0.0002 : 0.005 (Interlab)	0.0008	0.001	22	<0.005	0	0.0006	0.0006	0	<0.005	0	0.0032	0.0036	12	<0.005	0
Sum of PFAS	mg/kg	0.0002 : 0.05 (Interlab)	0.0008	0.001	22	<0.05	0	0.0006	0.0006	0	<0.05	0	0.0042	0.0043	2	<0.05	0
Moisture Content	%	0.1	29.8	28.3	5			30.1	26.5	13			20.4	23.7	15		

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Appendix D

Chain of Custody Records

Environmental Division
Townsville
Work Order Reference
ET2401536

Telephone : + 61 7 4773 0000

ALSCompass SAMPLING Intelligence

Custody Document for Submissions via ALS Compass App

Project: QLD-0229 PASOMP-24 Client: AECOM

Project Manager: [redacted]
Phone: ( )

ALS Compass COC Reference: 64770 # Samples: 5

Sampler: [redacted]
Phone: (

Turnaround Requirements: Standard 5 DAYS Urgent

Special Instructions:	ALS Use Only			
	Custody seal intact?	YES	NO	N/A
	Free ice / frozen ice bricks upon receipt?	YES	NO	N/A
	Random sample temperature on receipt?		°C	

Custody:

Relinquished by:	Received by:	Relinquished by:	Received by:
[redacted]	[redacted]	[redacted]	[redacted]
Date / Time: 11/3/24 13:18	Date / Time: 11/3/24 13:18	Date / Time: 11/3/24 13:18	Date / Time: 12/3/24 0745

CHAIN OF CUSTODY

ALS COC#: 64770 ALS Laboratory: ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0229_SW212_240307		07/03/2024 07:50 AM	WATER	ALS: 2 Non ALS: 0	No	X			
002	0229_SW211_240307		07/03/2024 08:10 AM	WATER	ALS: 2 Non ALS: 0	No	X			
003	0229_SD212_240307		07/03/2024 07:50 AM	SOIL	ALS: 1 Non ALS: 0	No		X		
004	0229_SD211_240307		07/03/2024 08:10 AM	SOIL	ALS: 1 Non ALS: 0	No		X		
005	0229_QC503_240308		08/03/2024 05:00 PM	WATER	ALS: 2 Non ALS: 0	No	X			

CHAIN OF CUSTODY

(ALS) COC#: **64770** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	0229_SW212_240307	HDPE (no PTFE)	20 mL	00352309056152	Grey	No	
001	0229_SW212_240307	HDPE (no PTFE)	20 mL	00352309056116	Grey	No	
002	0229_SW211_240307	HDPE (no PTFE)	20 mL	00352309042019	Grey	No	
002	0229_SW211_240307	HDPE (no PTFE)	20 mL	00352309041907	Grey	No	
003	0229_SD212_240307	HDPE Soil Jar	200 mL	00621122069832	Grey	No	
004	0229_SD211_240307	HDPE Soil Jar	200 mL	00621122069865	Grey	No	
005	0229_QC503_240308	HDPE (no PTFE)	20 mL	00350822081197	Grey	No	
005	0229_QC503_240308	HDPE (no PTFE)	20 mL	00350822081168	Grey	No	

Total Bottle Count: ALS: 8, Non ALS: 0

Environmental Division
Townsville
Work Order Reference
ET2401537

Telephone : + 61 7 4773 0000

ALSCompass SAMPLING Intelligence

Custody Document for Submissions via ALS Compass App

Project: QLD-0229_PFASOMP_24 Client: AECOM Project Manager: [redacted]

Phone: ( )

ALS Compass COC Reference: 64796 # Samples: 2 Sampler: [redacted]

Phone: ( )

Turnaround Requirements: Standard 5 DAYS Urgent

Special Instructions:	ALS Use Only			
	Custody seal intact?	YES	NO	N/A
	Free ice / frozen ice bricks upon receipt?	YES	NO	N/A
	Random sample temperature on receipt?		°C	

Custody:

Relinquished by:	Received by:	Relinquished by:	Received by:
[redacted]	[redacted]	[redacted]	[redacted]
Date / Time: 11/3/24 13:18	Date / Time: 11/3/24 13:18	Date / Time: 11/3/24 13:18	Date / Time: 12/3/24 0745

CHAIN OF CUSTODY

ALS COC#: 64796 *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0229_MW226_240308		08/03/2024 07:55 AM	WATER	ALS: 2 Non ALS: 0	No	X		
002	0229_QC502_240308		08/03/2024 05:00 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: **64796** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	0229_MW226_240308	HDPE (no PTFE)	20 mL	00352309056242	Grey	No	
001	0229_MW226_240308	HDPE (no PTFE)	20 mL	00352309056132	Grey	No	
002	0229_QC502_240308	HDPE (no PTFE)	20 mL	00350822081014	Grey	No	
002	0229_QC502_240308	HDPE (no PTFE)	20 mL	00350822081333	Grey	No	

Total Bottle Count: ALS: 4, Non ALS: 0

Environmental Division
Townsville
Work Order Reference
ET2401538

Telephone : +61 7 4773 0000

ALSCompass SAMPLING Intelligence

Custody Document for Submissions via ALS Compass App

Project: QLD-0229-PFASAMP-24 Client: AECOM Project Manager: [redacted]

Phone: ( )

ALS Compass COC Reference: 64547 # Samples: 34 Sampler: [redacted]

Phone: (

Turnaround Requirements: Standard 5 DAYS Urgent

Special Instructions:	ALS Use Only			
POTENTIAL HIGH PFAS CONCENTRATIONS IN ALL SAMPLES.	Custody seal intact?	YES	NO	N/A
	Free ice / frozen ice bricks upon receipt?	YES	NO	N/A
	Random sample temperature on receipt?		°C	

Custody:

Relinquished by:	Received by:	Relinquished by:	Received by:
[redacted]	[redacted]	[redacted]	[redacted]
Date / Time: 11/3/24 13:18	Date / Time: 11/3/24 13:18	Date / Time: 11/3/24	Date / Time: 12/3/24 0745

CHAIN OF CUSTODY

COC#: 64547 *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: C

Other comments:

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0229_SD243_240304		04/03/2024 11:52 AM	SOIL	ALS: 1 Non ALS: 0	No		X		
002	0229_SW243_240304		04/03/2024 11:53 AM	WATER	ALS: 4 Non ALS: 0	No	X			Extra vol for lab QC
003	0229_SW232_240304		04/03/2024 12:15 PM	WATER	ALS: 2 Non ALS: 0	No	X			
004	0229_SD232_240304		04/03/2024 12:19 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
005	0229_SW242_240304		04/03/2024 12:42 PM	WATER	ALS: 2 Non ALS: 0	No	X			
006	0229_SD242_240304		04/03/2024 12:43 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
007	0229_SD220_240304		04/03/2024 01:23 PM	SOIL	ALS: 1 Non ALS: 0	No		X		

CHAIN OF CUSTODY

COC#: 64547 *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
008	0229_SW220_240304		04/03/2024 01:24 PM	WATER	ALS: 4 Non ALS: 0	No	X			Extra vol for lab QC
009	0229_SW217_240304		04/03/2024 02:19 PM	WATER	ALS: 2 Non ALS: 0	No	X			
010	0229_QC150_240304		04/03/2024 02:20 PM	WATER	ALS: 2 Non ALS: 0	No	X			
011	0229_SD217_240304		04/03/2024 02:20 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
012	0229_QC151_240304		04/03/2024 02:21 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
013	0229_SD233_240304		04/03/2024 03:03 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
014	0229_SW233_240304		04/03/2024 03:04 PM	WATER	ALS: 4 Non ALS: 0	No	X			Extra vol for lab QC

CHAIN OF CUSTODY

COC#: 64547 *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
015	0229_SW203_240304		04/03/2024 03:32 PM	WATER	ALS: 2 Non ALS: 0	No	X			
016	0229_SD203_240304		04/03/2024 03:32 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
017	0229_SD135_240304		04/03/2024 04:00 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
018	0229_SW135_240304		04/03/2024 04:01 PM	WATER	ALS: 2 Non ALS: 0	No	X			
019	0229_SD133_240304		04/03/2024 04:14 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
020	0229_QC350_240304		04/03/2024 04:42 PM	WATER	ALS: 2 Non ALS: 0	No	X			
021	0229_QC351_240304		04/03/2024 04:46 PM	WATER	ALS: 2 Non ALS: 0	No	X			

CHAIN OF CUSTODY

COC#: 64547 ALS Laboratory: ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
022	0229_SW133_240305		05/03/2024 03:10 PM	WATER	ALS: 2 Non ALS: 0	No	X			
023	0229_QC352_240305		05/03/2024 07:00 PM	WATER	ALS: 2 Non ALS: 0	No	X			
024	0229_QC550_240304		04/03/2024 10:00 AM	WATER	ALS: 2 Non ALS: 0	No	X			
025	0229_MW232_240307		07/03/2024 09:10 AM	WATER	ALS: 2 Non ALS: 0	No	X			
026	0229_MW220S_240307		07/03/2024 09:57 AM	WATER	ALS: 2 Non ALS: 0	No	X			
027	0229_MW205S_240307		07/03/2024 10:15 AM	WATER	ALS: 2 Non ALS: 0	No	X			
028	0229_MW233_240307		07/03/2024 10:37 AM	WATER	ALS: 2 Non ALS: 0	No	X			

CHAIN OF CUSTODY

(ALS) COC#: 64547 *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comments:			

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
029	0229_MW212_240307		07/03/2024 10:51 AM	WATER	ALS: 2 Non ALS: 0	No	X			
030	0229_MW217_240307		07/03/2024 01:12 PM	WATER	ALS: 2 Non ALS: 0	No	X			
031	0229_QC152_240307		07/03/2024 12:20 PM	WATER	ALS: 2 Non ALS: 0	No	X			
032	0229_MW235S_240307		07/03/2024 12:45 AM	WATER	ALS: 2 Non ALS: 0	No	X			
033	0229_MW236S_240307		07/03/2024 01:17 PM	WATER	ALS: 2 Non ALS: 0	No	X			
034	0229_QC353_240307		07/03/2024 01:20 PM	WATER	ALS: 2 Non ALS: 0	No	X			

CHAIN OF CUSTODY

(ALS) COC#: **64547** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	0229_SD243_240304	HDPE Soil Jar	200 mL	00621122069806	Grey	No	
002	0229_SW243_240304	HDPE (no PTFE)	20 mL	00352309056080	Grey	No	
002	0229_SW243_240304	HDPE (no PTFE)	20 mL	00352309055830	Grey	No	
002	0229_SW243_240304	HDPE (no PTFE)	20 mL	00352309055685	Grey	No	
002	0229_SW243_240304	HDPE (no PTFE)	20 mL	00352309055871	Grey	No	
003	0229_SW232_240304	HDPE (no PTFE)	20 mL	00352309055940	Grey	No	
003	0229_SW232_240304	HDPE (no PTFE)	20 mL	00352309056135	Grey	No	
004	0229_SD232_240304	HDPE Soil Jar	200 mL	00621122069812	Grey	No	
005	0229_SW242_240304	HDPE (no PTFE)	20 mL	00352309056192	Grey	No	
005	0229_SW242_240304	HDPE (no PTFE)	20 mL	00352309055690	Grey	No	
006	0229_SD242_240304	HDPE Soil Jar	200 mL	00621122069885	Grey	No	
007	0229_SD220_240304	HDPE Soil Jar	200 mL	00621122069857	Grey	No	
008	0229_SW220_240304	HDPE (no PTFE)	20 mL	00352309055986	Grey	No	
008	0229_SW220_240304	HDPE (no PTFE)	20 mL	00352309055828	Grey	No	
008	0229_SW220_240304	HDPE (no PTFE)	20 mL	00352309056226	Grey	No	
008	0229_SW220_240304	HDPE (no PTFE)	20 mL	00352309055882	Grey	No	
009	0229_SW217_240304	HDPE (no PTFE)	20 mL	00352309055774	Grey	No	
009	0229_SW217_240304	HDPE (no PTFE)	20 mL	00352309055915	Grey	No	
010	0229_QC150_240304	HDPE (no PTFE)	20 mL	00352309055718	Grey	No	
010	0229_QC150_240304	HDPE (no PTFE)	20 mL	00352309055844	Grey	No	
011	0229_SD217_240304	HDPE Soil Jar	200 mL	00621222029172	Grey	No	
012	0229_QC151_240304	HDPE Soil Jar	200 mL	00621222029193	Grey	No	
013	0229_SD233_240304	HDPE Soil Jar	200 mL	00621222029174	Grey	No	
014	0229_SW233_240304	HDPE (no PTFE)	20 mL	00352309055998	Grey	No	
014	0229_SW233_240304	HDPE (no PTFE)	20 mL	00352309055875	Grey	No	
014	0229_SW233_240304	HDPE (no PTFE)	20 mL	00352309055656	Grey	No	

CHAIN OF CUSTODY

COC#: 64547 ALS Laboratory: ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

014	0229_SW233_240304	HDPE (no PTFE)	20 mL	00352309056210	Grey	No	
015	0229_SW203_240304	HDPE (no PTFE)	20 mL	00352309055887	Grey	No	
015	0229_SW203_240304	HDPE (no PTFE)	20 mL	00352309055794	Grey	No	
016	0229_SD203_240304	HDPE Soil Jar	200 mL	00621222029142	Grey	No	
017	0229_SD135_240304	HDPE Soil Jar	200 mL	00621222029173	Grey	No	
018	0229_SW135_240304	HDPE (no PTFE)	20 mL	00352309056164	Grey	No	
018	0229_SW135_240304	HDPE (no PTFE)	20 mL	00352309056097	Grey	No	
019	0229_SD133_240304	HDPE Soil Jar	200 mL	00621222029214	Grey	No	
020	0229_QC350_240304	HDPE (no PTFE)	20 mL	00352309041855	Grey	No	
020	0229_QC350_240304	HDPE (no PTFE)	20 mL	00352309041839	Grey	No	
021	0229_QC351_240304	HDPE (no PTFE)	20 mL	00352309055684	Grey	No	
021	0229_QC351_240304	HDPE (no PTFE)	20 mL	00352309055873	Grey	No	
022	0229_SW133_240305	HDPE (no PTFE)	20 mL	00352309055854	Grey	No	
022	0229_SW133_240305	HDPE (no PTFE)	20 mL	00352309055665	Grey	No	
023	0229_QC352_240305	HDPE (no PTFE)	20 mL	00352309056021	Grey	No	
023	0229_QC352_240305	HDPE (no PTFE)	20 mL	00352309055758	Grey	No	
024	0229_QC550_240304	HDPE (no PTFE)	20 mL	00352309055689	Grey	No	
024	0229_QC550_240304	HDPE (no PTFE)	20 mL	00352309055652	Grey	No	
025	0229_MW232_240307	HDPE (no PTFE)	20 mL	00352309056012	Grey	No	
025	0229_MW232_240307	HDPE (no PTFE)	20 mL	00352309055809	Grey	No	
026	0229_MW220S_240307	HDPE (no PTFE)	20 mL	00352309041906	Grey	No	
026	0229_MW220S_240307	HDPE (no PTFE)	20 mL	00352309042062	Grey	No	
027	0229_MW205S_240307	HDPE (no PTFE)	20 mL	00350822080893	Grey	No	
027	0229_MW205S_240307	HDPE (no PTFE)	20 mL	00350822081107	Grey	No	
028	0229_MW233_240307	HDPE (no PTFE)	20 mL	00350822081275	Grey	No	
028	0229_MW233_240307	HDPE (no PTFE)	20 mL	00350822081043	Grey	No	
029	0229_MW212_240307	HDPE (no PTFE)	20 mL	00352309042072	Grey	No	

CHAIN OF CUSTODY

(ALS) COC#: **64547** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:
QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

029	0229_MW212_240307	HDPE (no PTFE)	20 mL	00352309042096	Grey	No	
030	0229_MW217_240307	HDPE (no PTFE)	20 mL	00352309055902	Grey	No	
030	0229_MW217_240307	HDPE (no PTFE)	20 mL	00352309055725	Grey	No	
031	0229_QC152_240307	HDPE (no PTFE)	20 mL	00352309055924	Grey	No	
031	0229_QC152_240307	HDPE (no PTFE)	20 mL	00352309055877	Grey	No	
032	0229_MW235S_240307	HDPE (no PTFE)	20 mL	00352309041856	Grey	No	
032	0229_MW235S_240307	HDPE (no PTFE)	20 mL	00352309041858	Grey	No	
033	0229_MW236S_240307	HDPE (no PTFE)	20 mL	00350822080786	Grey	No	
033	0229_MW236S_240307	HDPE (no PTFE)	20 mL	00350822081189	Grey	No	
034	0229_QC353_240307	HDPE (no PTFE)	20 mL	00352309042085	Grey	No	
034	0229_QC353_240307	HDPE (no PTFE)	20 mL	00352309042032	Grey	No	

Total Bottle Count: ALS: 64, Non ALS: 0

Environmental Division
Townsville
Work Order Reference
ET2401539

Telephone : +61 7 4773 0000

ALSCompass SAMPLING Intelligence

Custody Document for Submissions via ALS Compass App

Project: QLD-0229_PFASOMP_24 Client: AECOM Project Manager: [redacted]

Phone: ( )

ALS Compass COC Reference: 64506 # Samples: 79 Sampler: [redacted]

Phone: ( )

Turnaround Requirements: Standard 5 DAYS Urgent

Special Instructions:	ALS Use Only			
POTENTIAL HIGH PFAS CONCENTRATIONS IN ALL SAMPLES	Custody seal intact?	YES	NO	N/A
	Free ice / frozen ice bricks upon receipt?	YES	NO	N/A
	Random sample temperature on receipt?		°C	

Custody:

Relinquished by:	Received by:	Relinquished by:	Received by:
[redacted]	[redacted]	[redacted]	[redacted]
Date / Time: 11/3/24 13:18	Date / Time: 11/3/24 13:18	Date / Time: 11/3/24	Date / Time: 12/3/24 0745

CHAIN OF CUSTODY

(ALS) COC#: **64506** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:
QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0229_SD144_240304		04/03/2024 11:21 AM	SOIL	ALS: 1 Non ALS: 0	No		X		
002	0229_SW144_240304		04/03/2024 11:21 AM	WATER	ALS: 2 Non ALS: 0	No	X			
003	0229_SD109_240304		04/03/2024 11:40 AM	SOIL	ALS: 1 Non ALS: 0	No		X		
004	0229_SW109_240304		04/03/2024 11:41 AM	WATER	ALS: 2 Non ALS: 0	No	X			
005	0229_SD110_240304		04/03/2024 11:41 AM	SOIL	ALS: 1 Non ALS: 0	No		X		
006	0229_SW110_240304		04/03/2024 11:43 AM	WATER	ALS: 2 Non ALS: 0	No	X			
007	0229_SD139_240304		04/03/2024 12:10 PM	SOIL	ALS: 1 Non ALS: 0	No		X		

CHAIN OF CUSTODY

COC#: **64506** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
008	0229_SW139_240304		04/03/2024 12:10 PM	WATER	ALS: 2 Non ALS: 0	No	X			
009	0229_SW113_240304		04/03/2024 12:33 PM	WATER	ALS: 2 Non ALS: 0	No	X			
010	0229_SD113_240304		04/03/2024 12:33 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
011	0229_QC100_240304		04/03/2024 12:34 PM	WATER	ALS: 2 Non ALS: 0	No	X			
012	0229_QC101_240304		04/03/2024 12:35 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
013	0229_SD119_240304		04/03/2024 12:55 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
014	0229_SW119_240304		04/03/2024 12:55 PM	WATER	ALS: 4 Non ALS: 0	No	X			Extra volume for lab QC

CHAIN OF CUSTODY

(ALS) COC#: 64506 *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
015	0229_SW120_240304		04/03/2024 01:11 PM	WATER	ALS: 2 Non ALS: 0	No	X			
016	0229_SD120_240304		04/03/2024 01:12 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
017	0229_SD140_240304		04/03/2024 01:27 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
018	0229_SW140_240304		04/03/2024 01:28 PM	WATER	ALS: 2 Non ALS: 0	No	X			
019	0229_SW134_240304		04/03/2024 02:02 PM	WATER	ALS: 2 Non ALS: 0	No	X			
020	0229_SD132_240304		04/03/2024 02:16 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
021	0229_SW132_240304		04/03/2024 02:16 PM	WATER	ALS: 4 Non ALS: 0	No	X			Extra volume for lab QC

CHAIN OF CUSTODY

(ALS) COC#: 64506 ALS Laboratory: ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
022	0229_SW130_240304		04/03/2024 02:30 PM	WATER	ALS: 2 Non ALS: 0	No	X			
023	0229_SD130_240304		04/03/2024 02:30 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
024	0229_SW129_240304		04/03/2024 02:42 PM	WATER	ALS: 2 Non ALS: 0	No	X			
025	0229_SD128_240304		04/03/2024 02:53 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
026	0229_SW128_240304		04/03/2024 02:53 PM	WATER	ALS: 2 Non ALS: 0	No	X			
027	0229_SD126_240304		04/03/2024 03:06 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
028	0229_QC103_240304		04/03/2024 03:07 PM	SOIL	ALS: 1 Non ALS: 0	No		X		

CHAIN OF CUSTODY

(ALS) COC#: 64506 *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
029	0229_SW126_240304		04/03/2024 03:07 PM	WATER	ALS: 2 Non ALS: 0	No	X			
030	0229_QC102_240304		04/03/2024 03:08 PM	WATER	ALS: 2 Non ALS: 0	No	X			
031	0229_SD136_240304		04/03/2024 03:45 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
032	0229_SW136_240304		04/03/2024 03:46 PM	WATER	ALS: 4 Non ALS: 0	No	X			Extra volume for lab QC
033	0229_SW121_240304		04/03/2024 03:57 PM	WATER	ALS: 2 Non ALS: 0	No	X			
034	0229_SD121_240304		04/03/2024 03:57 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
035	0229_QC300_240305		05/03/2024 06:04 PM	WATER	ALS: 2 Non ALS: 0	No	X			

CHAIN OF CUSTODY

(ALS) COC#: 64506 ALS Laboratory: ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
036	0229_SD245_240307		07/03/2024 08:55 AM	SOIL	ALS: 1 Non ALS: 0	No		X		
037	0229_SW245_240307		07/03/2024 08:56 AM	WATER	ALS: 2 Non ALS: 0	No	X			
038	0229_SD227_240307		07/03/2024 10:17 AM	SOIL	ALS: 1 Non ALS: 0	No		X		
039	0229_SW227_240307		07/03/2024 10:18 AM	WATER	ALS: 2 Non ALS: 0	No	X			
040	0229_SD244_240307		07/03/2024 12:53 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
041	0229_SW244_240307		07/03/2024 12:55 PM	WATER	ALS: 2 Non ALS: 0	No	X			
042	0229_QC301_240307		07/03/2024 01:10 PM	WATER	ALS: 2 Non ALS: 0	No	X			

CHAIN OF CUSTODY

(ALS) COC#: **64506** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
043	0229_MW118_240307		07/03/2024 01:24 PM	WATER	ALS: 2 Non ALS: 0	No	X			
044	0229_MW018_240307		07/03/2024 02:20 PM	WATER	ALS: 2 Non ALS: 0	No	X			
045	0229_MW114_240307		07/03/2024 02:36 PM	WATER	ALS: 2 Non ALS: 0	No	X			
046	0229_MW135_240307		07/03/2024 02:48 PM	WATER	ALS: 2 Non ALS: 0	No	X			
047	0229_MW141_240307		07/03/2024 03:04 PM	WATER	ALS: 2 Non ALS: 0	No	X			
048	0229_QC104_240307		07/03/2024 03:05 PM	WATER	ALS: 2 Non ALS: 0	No	X			
049	0229_MW131_240307		07/03/2024 03:12 PM	WATER	ALS: 4 Non ALS: 0	No	X			Extra vol for lab QC

CHAIN OF CUSTODY

(ALS) COC#: **64506** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:
QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
050	0229_MW072_240307		07/03/2024 03:22 PM	WATER	ALS: 2 Non ALS: 0	No	X			
051	0229_MW074_240307		07/03/2024 03:27 PM	WATER	ALS: 2 Non ALS: 0	No	X			
052	0229_MW106_240307		07/03/2024 03:35 PM	WATER	ALS: 2 Non ALS: 0	No	X			
053	0229_MW102_240307		07/03/2024 03:45 PM	WATER	ALS: 2 Non ALS: 0	No	X			
054	0229_MW101_240307		07/03/2024 03:54 PM	WATER	ALS: 4 Non ALS: 0	No	X			Extra vol for lab QC
055	0229_MW138_240307		07/03/2024 04:05 PM	WATER	ALS: 2 Non ALS: 0	No	X			
056	0229_MW128_240307		07/03/2024 04:14 PM	WATER	ALS: 2 Non ALS: 0	No	X			

CHAIN OF CUSTODY

(ALS) COC#: **64506** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
057	0229_MW105_240307		07/03/2024 04:16 PM	WATER	ALS: 2 Non ALS: 0	No	X			
058	0229_QC302_240307		07/03/2024 04:25 PM	WATER	ALS: 2 Non ALS: 0	No	X			
059	0229_MW125I_240308		08/03/2024 08:45 AM	WATER	ALS: 4 Non ALS: 0	No	X			Extra vol for lab QC
060	0229_MW125S_240308		08/03/2024 08:50 AM	WATER	ALS: 2 Non ALS: 0	No	X			
061	0229_MW124_240308		08/03/2024 09:04 AM	WATER	ALS: 2 Non ALS: 0	No	X			
062	0229_QC105_240308		08/03/2024 09:05 AM	WATER	ALS: 2 Non ALS: 0	No	X			
063	0229_MW003_240308		08/03/2024 09:29 AM	WATER	ALS: 2 Non ALS: 0	No	X			

CHAIN OF CUSTODY

(ALS) COC#: **64506** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:
QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
064	0229_MW123I_240308		08/03/2024 10:02 AM	WATER	ALS: 2 Non ALS: 0	No	X			
065	0229_MW123S_240308		08/03/2024 10:16 AM	WATER	ALS: 2 Non ALS: 0	No	X			
066	0229_MW065_240308		08/03/2024 10:23 AM	WATER	ALS: 4 Non ALS: 0	No	X			Extra vol for lab QC
067	0229_MW122_240308		08/03/2024 10:40 AM	WATER	ALS: 2 Non ALS: 0	No	X			
068	0229_MW121_240308		08/03/2024 10:49 AM	WATER	ALS: 2 Non ALS: 0	No	X			
069	0229_MW120_240308		08/03/2024 11:02 AM	WATER	ALS: 4 Non ALS: 0	No	X			Extra vol for lab QC
070	0229_MW002_240308		08/03/2024 11:14 AM	WATER	ALS: 2 Non ALS: 0	No	X			

CHAIN OF CUSTODY

ALS COC#: 64506 ALS Laboratory: ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
071	0229_QC106_240308		08/03/2024 11:15 AM	WATER	ALS: 2 Non ALS: 0	No	X			
072	0229_MW116_240308		08/03/2024 11:21 AM	WATER	ALS: 2 Non ALS: 0	No	X			
073	0229_MW115_240308		08/03/2024 11:31 AM	WATER	ALS: 4 Non ALS: 0	No	X			Extra vol for lab QC
074	0229_MW139_240308		08/03/2024 11:43 AM	WATER	ALS: 2 Non ALS: 0	No	X			
075	0229_QC303_240308		08/03/2024 11:46 AM	WATER	ALS: 2 Non ALS: 0	No	X			
076	0229_MW119_240308		08/03/2024 12:00 PM	WATER	ALS: 2 Non ALS: 0	No	X			
077	0229_SD129_240304		08/03/2024 10:07 AM	SOIL	ALS: 1 Non ALS: 0	No		X		

CHAIN OF CUSTODY

(ALS) *COC#:* **64506** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED			
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	Table 2 - Soil Analysis SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
078	0229_SD134_240304		04/03/2024 12:08 PM	SOIL	ALS: 1 Non ALS: 0	No		X		
079	0229_QC501_240308		08/03/2024 05:00 PM	WATER	ALS: 2 Non ALS: 0	No	X			

CHAIN OF CUSTODY

(ALS) COC#: 64506 *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:
QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	0229_SD144_240304	HDPE Soil Jar	200 mL	00621222058231	Grey	No	
002	0229_SW144_240304	HDPE (no PTFE)	20 mL	00352309041845	Grey	No	
002	0229_SW144_240304	HDPE (no PTFE)	20 mL	00352309042064	Grey	No	
003	0229_SD109_240304	HDPE Soil Jar	200 mL	00621222058218	Grey	No	
004	0229_SW109_240304	HDPE (no PTFE)	20 mL	00352309041944	Grey	No	
004	0229_SW109_240304	HDPE (no PTFE)	20 mL	00352309042060	Grey	No	
005	0229_SD110_240304	HDPE Soil Jar	200 mL	00621222029176	Grey	No	
006	0229_SW110_240304	HDPE (no PTFE)	20 mL	00352309055850	Grey	No	
006	0229_SW110_240304	HDPE (no PTFE)	20 mL	00352309056082	Grey	No	
007	0229_SD139_240304	HDPE Soil Jar	200 mL	00621222058220	Grey	No	
008	0229_SW139_240304	HDPE (no PTFE)	20 mL	00352309055807	Grey	No	
008	0229_SW139_240304	HDPE (no PTFE)	20 mL	00352309055987	Grey	No	
009	0229_SW113_240304	HDPE (no PTFE)	20 mL	00350522033390	Grey	No	
009	0229_SW113_240304	HDPE (no PTFE)	20 mL	00350522033321	Grey	No	
010	0229_SD113_240304	HDPE Soil Jar	200 mL	00621222058288	Grey	No	
011	0229_QC100_240304	HDPE (no PTFE)	20 mL	00352309055723	Grey	No	
011	0229_QC100_240304	HDPE (no PTFE)	20 mL	00352309055967	Grey	No	
012	0229_QC101_240304	HDPE Soil Jar	200 mL	00621222058287	Grey	No	
013	0229_SD119_240304	HDPE Soil Jar	200 mL	00621222058279	Grey	No	
014	0229_SW119_240304	HDPE (no PTFE)	20 mL	00352309042128	Grey	No	
014	0229_SW119_240304	HDPE (no PTFE)	20 mL	00352309042036	Grey	No	
014	0229_SW119_240304	HDPE (no PTFE)	20 mL	00352309055977	Grey	No	
014	0229_SW119_240304	HDPE (no PTFE)	20 mL	00352309056155	Grey	No	
015	0229_SW120_240304	HDPE (no PTFE)	20 mL	00352309041997	Grey	No	
015	0229_SW120_240304	HDPE (no PTFE)	20 mL	00352309041936	Grey	No	
016	0229_SD120_240304	HDPE Soil Jar	200 mL	00621222058213	Grey	No	

CHAIN OF CUSTODY

(ALS) COC#: **64506** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:
QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

017	0229_SD140_240304	HDPE Soil Jar	200 mL	00621222058226	Grey	No	
018	0229_SW140_240304	HDPE (no PTFE)	20 mL	00352309041870	Grey	No	
018	0229_SW140_240304	HDPE (no PTFE)	20 mL	00352309042016	Grey	No	
019	0229_SW134_240304	HDPE (no PTFE)	20 mL	00352309041931	Grey	No	
019	0229_SW134_240304	HDPE (no PTFE)	20 mL	00352309042090	Grey	No	
020	0229_SD132_240304	HDPE Soil Jar	200 mL	00621222058277	Grey	No	
021	0229_SW132_240304	HDPE (no PTFE)	20 mL	00352309055920	Grey	No	
021	0229_SW132_240304	HDPE (no PTFE)	20 mL	00352309055686	Grey	No	
021	0229_SW132_240304	HDPE (no PTFE)	20 mL	00352309055811	Grey	No	
021	0229_SW132_240304	HDPE (no PTFE)	20 mL	00352309055849	Grey	No	
022	0229_SW130_240304	HDPE (no PTFE)	20 mL	00352309042066	Grey	No	
022	0229_SW130_240304	HDPE (no PTFE)	20 mL	00352309042021	Grey	No	
023	0229_SD130_240304	HDPE Soil Jar	200 mL	00621222058290	Grey	No	
024	0229_SW129_240304	HDPE (no PTFE)	20 mL	00350822080845	Grey	No	
024	0229_SW129_240304	HDPE (no PTFE)	20 mL	00350822081132	Grey	No	
025	0229_SD128_240304	HDPE Soil Jar	200 mL	00621222029184	Grey	No	
026	0229_SW128_240304	HDPE (no PTFE)	20 mL	00352309055789	Grey	No	
026	0229_SW128_240304	HDPE (no PTFE)	20 mL	00352309056064	Grey	No	
027	0229_SD126_240304	HDPE Soil Jar	200 mL	00621222029194	Grey	No	
028	0229_QC103_240304	HDPE Soil Jar	200 mL	00621222029199	Grey	No	
029	0229_SW126_240304	HDPE (no PTFE)	20 mL	00350822081039	Grey	No	
029	0229_SW126_240304	HDPE (no PTFE)	20 mL	00350822080980	Grey	No	
030	0229_QC102_240304	HDPE (no PTFE)	20 mL	00352309041963	Grey	No	
030	0229_QC102_240304	HDPE (no PTFE)	20 mL	00352309042107	Grey	No	
031	0229_SD136_240304	HDPE Soil Jar	200 mL	00621222058269	Grey	No	
032	0229_SW136_240304	HDPE (no PTFE)	20 mL	00350822081081	Grey	No	
032	0229_SW136_240304	HDPE (no PTFE)	20 mL	00350522033385	Grey	No	

CHAIN OF CUSTODY

(ALS) COC#: **64506** *ALS Laboratory:* ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:
QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

032	0229_SW136_240304	HDPE (no PTFE)	20 mL	00350822080898	Grey	No	
032	0229_SW136_240304	HDPE (no PTFE)	20 mL	00350522033572	Grey	No	
033	0229_SW121_240304	HDPE (no PTFE)	20 mL	00352309042104	Grey	No	
033	0229_SW121_240304	HDPE (no PTFE)	20 mL	00352309041894	Grey	No	
034	0229_SD121_240304	HDPE Soil Jar	200 mL	00621222029171	Grey	No	
035	0229_QC300_240305	HDPE (no PTFE)	20 mL	00352309042084	Grey	No	
035	0229_QC300_240305	HDPE (no PTFE)	20 mL	00352309041951	Grey	No	
036	0229_SD245_240307	HDPE Soil Jar	200 mL	00621122069905	Grey	No	
037	0229_SW245_240307	HDPE (no PTFE)	20 mL	00352309055741	Grey	No	
037	0229_SW245_240307	HDPE (no PTFE)	20 mL	00352309055846	Grey	No	
038	0229_SD227_240307	HDPE Soil Jar	200 mL	00621019076336	Grey	No	
039	0229_SW227_240307	HDPE (no PTFE)	20 mL	00352309055959	Grey	No	
039	0229_SW227_240307	HDPE (no PTFE)	20 mL	00352309055919	Grey	No	
040	0229_SD244_240307	HDPE Soil Jar	200 mL	00621122069828	Grey	No	
041	0229_SW244_240307	HDPE (no PTFE)	20 mL	00352309055801	Grey	No	
041	0229_SW244_240307	HDPE (no PTFE)	20 mL	00352309055855	Grey	No	
042	0229_QC301_240307	HDPE (no PTFE)	20 mL	00352309055942	Grey	No	
042	0229_QC301_240307	HDPE (no PTFE)	20 mL	00352309055863	Grey	No	
043	0229_MW118_240307	HDPE (no PTFE)	20 mL	00350822080855	Grey	No	
043	0229_MW118_240307	HDPE (no PTFE)	20 mL	00350822081017	Grey	No	
044	0229_MW018_240307	HDPE (no PTFE)	20 mL	00352309056202	Grey	No	
044	0229_MW018_240307	HDPE (no PTFE)	20 mL	00352309055810	Grey	No	
045	0229_MW114_240307	HDPE (no PTFE)	20 mL	00352309055889	Grey	No	
045	0229_MW114_240307	HDPE (no PTFE)	20 mL	00352309055861	Grey	No	
046	0229_MW135_240307	HDPE (no PTFE)	20 mL	00350822080826	Grey	No	
046	0229_MW135_240307	HDPE (no PTFE)	20 mL	00350822081343	Grey	No	
047	0229_MW141_240307	HDPE (no PTFE)	20 mL	00352309041917	Grey	No	

CHAIN OF CUSTODY

ALS COC#: 64506 ALS Laboratory: ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

047	0229_MW141_240307	HDPE (no PTFE)	20 mL	00352309042027	Grey	No	
048	0229_QC104_240307	HDPE (no PTFE)	20 mL	00352309041988	Grey	No	
048	0229_QC104_240307	HDPE (no PTFE)	20 mL	00352309041853	Grey	No	
049	0229_MW131_240307	HDPE (no PTFE)	20 mL	00350822081078	Grey	No	
049	0229_MW131_240307	HDPE (no PTFE)	20 mL	00352309041877	Grey	No	
049	0229_MW131_240307	HDPE (no PTFE)	20 mL	00352309041842	Grey	No	
049	0229_MW131_240307	HDPE (no PTFE)	20 mL	00350822080968	Grey	No	
050	0229_MW072_240307	HDPE (no PTFE)	20 mL	00352309041996	Grey	No	
050	0229_MW072_240307	HDPE (no PTFE)	20 mL	00352309041959	Grey	No	
051	0229_MW074_240307	HDPE (no PTFE)	20 mL	00352309055764	Grey	No	
051	0229_MW074_240307	HDPE (no PTFE)	20 mL	00352309055922	Grey	No	
052	0229_MW106_240307	HDPE (no PTFE)	20 mL	00350822081088	Grey	No	
052	0229_MW106_240307	HDPE (no PTFE)	20 mL	00350822081176	Grey	No	
053	0229_MW102_240307	HDPE (no PTFE)	20 mL	00352309042030	Grey	No	
053	0229_MW102_240307	HDPE (no PTFE)	20 mL	00352309041941	Grey	No	
054	0229_MW101_240307	HDPE (no PTFE)	20 mL	00350822080960	Grey	No	
054	0229_MW101_240307	HDPE (no PTFE)	20 mL	00350822080966	Grey	No	
054	0229_MW101_240307	HDPE (no PTFE)	20 mL	00350522033416	Grey	No	
054	0229_MW101_240307	HDPE (no PTFE)	20 mL	00350522033331	Grey	No	
055	0229_MW138_240307	HDPE (no PTFE)	20 mL	00352309056232	Grey	No	
055	0229_MW138_240307	HDPE (no PTFE)	20 mL	00352309055765	Grey	No	
056	0229_MW128_240307	HDPE (no PTFE)	20 mL	00352309041962	Grey	No	
056	0229_MW128_240307	HDPE (no PTFE)	20 mL	00352309042135	Grey	No	
057	0229_MW105_240307	HDPE (no PTFE)	20 mL	00352309041973	Grey	No	
057	0229_MW105_240307	HDPE (no PTFE)	20 mL	00352309042034	Grey	No	
058	0229_QC302_240307	HDPE (no PTFE)	20 mL	00350822080901	Grey	No	
058	0229_QC302_240307	HDPE (no PTFE)	20 mL	00350822081044	Grey	No	

CHAIN OF CUSTODY

COC#: 64506 ALS Laboratory: ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]
PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:
QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

059	0229_MW125I_240308	HDPE (no PTFE)	20 mL	00352309055923	Grey	No	
059	0229_MW125I_240308	HDPE (no PTFE)	20 mL	00352309055896	Grey	No	
059	0229_MW125I_240308	HDPE (no PTFE)	20 mL	00352309055946	Grey	No	
059	0229_MW125I_240308	HDPE (no PTFE)	20 mL	00352309055950	Grey	No	
060	0229_MW125S_240308	HDPE (no PTFE)	20 mL	00352309055786	Grey	No	
060	0229_MW125S_240308	HDPE (no PTFE)	20 mL	00352309056174	Grey	No	
061	0229_MW124_240308	HDPE (no PTFE)	20 mL	00350522033490	Grey	No	
061	0229_MW124_240308	HDPE (no PTFE)	20 mL	00350522033325	Grey	No	
062	0229_QC105_240308	HDPE (no PTFE)	20 mL	00352309055868	Grey	No	
062	0229_QC105_240308	HDPE (no PTFE)	20 mL	00352309055960	Grey	No	
063	0229_MW003_240308	HDPE (no PTFE)	20 mL	00350822080798	Grey	No	
063	0229_MW003_240308	HDPE (no PTFE)	20 mL	00350822080832	Grey	No	
064	0229_MW123I_240308	HDPE (no PTFE)	20 mL	00352309055751	Grey	No	
064	0229_MW123I_240308	HDPE (no PTFE)	20 mL	00352309055777	Grey	No	
065	0229_MW123S_240308	HDPE (no PTFE)	20 mL	00352309041898	Grey	No	
065	0229_MW123S_240308	HDPE (no PTFE)	20 mL	00352309041918	Grey	No	
066	0229_MW065_240308	HDPE (no PTFE)	20 mL	00352309055646	Grey	No	
066	0229_MW065_240308	HDPE (no PTFE)	20 mL	00352309056203	Grey	No	
066	0229_MW065_240308	HDPE (no PTFE)	20 mL	00352309055826	Grey	No	
066	0229_MW065_240308	HDPE (no PTFE)	20 mL	00352309056209	Grey	No	
067	0229_MW122_240308	HDPE (no PTFE)	20 mL	00352309041969	Grey	No	
067	0229_MW122_240308	HDPE (no PTFE)	20 mL	00352309041964	Grey	No	
068	0229_MW121_240308	HDPE (no PTFE)	20 mL	00352309056048	Grey	No	
068	0229_MW121_240308	HDPE (no PTFE)	20 mL	00352309055969	Grey	No	
069	0229_MW120_240308	HDPE (no PTFE)	20 mL	00352309055928	Grey	No	
069	0229_MW120_240308	HDPE (no PTFE)	20 mL	00352309055913	Grey	No	
069	0229_MW120_240308	HDPE (no PTFE)	20 mL	00352309055895	Grey	No	

CHAIN OF CUSTODY

(ALS) COC#: 64506 ALS Laboratory: ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

069	0229_MW120_240308	HDPE (no PTFE)	20 mL	00352309055668	Grey	No	
070	0229_MW002_240308	HDPE (no PTFE)	20 mL	00352309056060	Grey	No	
070	0229_MW002_240308	HDPE (no PTFE)	20 mL	00352309055906	Grey	No	
071	0229_QC106_240308	HDPE (no PTFE)	20 mL	00352309042012	Grey	No	
071	0229_QC106_240308	HDPE (no PTFE)	20 mL	00352309042017	Grey	No	
072	0229_MW116_240308	HDPE (no PTFE)	20 mL	00352309042044	Grey	No	
072	0229_MW116_240308	HDPE (no PTFE)	20 mL	00352309041981	Grey	No	
073	0229_MW115_240308	HDPE (no PTFE)	20 mL	00352309055935	Grey	No	
073	0229_MW115_240308	HDPE (no PTFE)	20 mL	00352309042127	Grey	No	
073	0229_MW115_240308	HDPE (no PTFE)	20 mL	00352309042003	Grey	No	
073	0229_MW115_240308	HDPE (no PTFE)	20 mL	00352309055752	Grey	No	
074	0229_MW139_240308	HDPE (no PTFE)	20 mL	00352309041919	Grey	No	
074	0229_MW139_240308	HDPE (no PTFE)	20 mL	00352309042118	Grey	No	
075	0229_QC303_240308	HDPE (no PTFE)	20 mL	00352309041970	Grey	No	
075	0229_QC303_240308	HDPE (no PTFE)	20 mL	00352309041850	Grey	No	
076	0229_MW119_240308	HDPE (no PTFE)	20 mL	00352309055961	Grey	No	
076	0229_MW119_240308	HDPE (no PTFE)	20 mL	00352309055683	Grey	No	
077	0229_SD129_240304	HDPE Soil Jar	200 mL	00621222058222	Grey	No	
078	0229_SD134_240304	HDPE Soil Jar	200 mL	00621222058251	Grey	No	
079	0229_QC501_240308	HDPE (no PTFE)	20 mL	00350822060861	Grey	No	
079	0229_QC501_240308	HDPE (no PTFE)	20 mL	00350822061009	Grey	No	

Total Bottle Count: ALS: 155, Non ALS: 0

ALSCompass SAMPLING Intelligence

ALS

Environmental Division
Townsville
Work Order Reference
ET2401603

Telephone : +61 7 4773 0000

Custody Document for Submissions via ALS Compass App

Project: QLD-0229_PFASOMP_24 Client: AECOM Project Manager: [redacted]

Phone: ( )

ALS Compass COC Reference: 64989 # Samples: 3 Sampler: [redacted]

Phone: (

Turnaround Requirements: Standard 5 DAYS. Urgent

Special Instructions:	ALS Use Only			
	Custody seal intact?	YES	NO	N/A
	Free ice / frozen ice bricks upon receipt?	YES	NO	N/A
	Random sample temperature on receipt?		°C	

Custody:

Relinquished by:	Received by:	Relinquished by:	Received by:
[redacted]	[redacted]	[redacted]	[redacted]
Date / Time: 13/3/24 16:15	Date / Time: 13/3/24 1615	Date / Time: 13/3/24	Date / Time: 14/3/24 0750

[redacted] 14/3

BL (ALS)
Received 15/3/24 09:40

CHAIN OF CUSTODY

COC#: 64989 ALS Laboratory: ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER: [redacted]

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comments:			

SAMPLE DETAILS							ANALYSIS REQUIRED		
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Table 1 - Water Analysis WATER	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	0229_QC354_240312		12/03/2024 04:29 PM	WATER	ALS: 2 Non ALS: 0	No	X		
002	0229_QC355_240312		12/03/2024 04:41 PM	WATER	ALS: 2 Non ALS: 0	No	X		
003	0229_QC551_240312		12/03/2024 04:43 PM	WATER	ALS: 2 Non ALS: 0	No	X		

CHAIN OF CUSTODY

COC#: 64989 ALS Laboratory: ET Townsville Environmental

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

CLIENT: AECOMAU - AECOM AUSTRALIA PTY LTD

PROJECT: QLD_0229_PFASOMP_24

SITE: QLD_0229

ORDER NO: 60612487_3.1

PROJECT MANAGER: [redacted]

PRIMARY SAMPLER:

CONTACT PH: SAMPLER MOBILE:

QUOTE NO: EB23AECOMAU0017 / EB2023AECOMAU0017

EMAIL REPORTS TO: [redacted]

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	0229_QC354_240312	HDPE (no PTFE)	20 mL	00350822080888	Grey	No	
001	0229_QC354_240312	HDPE (no PTFE)	20 mL	00350822081114	Grey	No	
002	0229_QC355_240312	HDPE (no PTFE)	20 mL	00352309055939	Grey	No	
002	0229_QC355_240312	HDPE (no PTFE)	20 mL	00352309056239	Grey	No	
003	0229_QC551_240312	HDPE (no PTFE)	20 mL	00350822081184	Grey	No	
003	0229_QC551_240312	HDPE (no PTFE)	20 mL	00350822081137	Grey	No	

Total Bottle Count: ALS: 6, Non ALS: 0

AECOM

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM		ADDRESS: Townsville		SAMPLER: [redacted]	**Destination Laboratory** **Eurofins**
PROJECT MANAGER (PM): [redacted]		SITE: **QLD_0229**		MOBILE: [redacted]	PHONE:
PROJECT NUMBER & TASK CODE: **QLD_0229_PFASOMP_24**		P.O. No.: 60612487_3.1		EMAIL REPORT TO: [redacted]	
RESULTS REQUIRED (**Date**): Standard TAT		QUOTE NO.: MSA 1 Oct. 2023		**ANALYSIS REQUIRED including SUITES** (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
Results in Esdat format

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		WATER - PFAS Standard 28 analytes	SOIL - PFAS Standard 28 analytes										HOLD
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles												
	0229_QC200_240304	W	4/03/24		2 x P	2	x											
	0229_QC201_240304	S	4/03/24		1 x Jar	1		x										
	0229_QC202_240304	W	4/03/24		2 x P	2	x											
	0229_QC203_240304	S	4/03/24		1 x Jar	1		x										
	0229_QC204_240307	W	7/04/24		2 x P	2	x											
	0229_QC205_240308	W	8/04/24		2 x P	2	x											
	0229_QC206_240308	W	8/04/24		2 x P	2	x											
	0229_QC250_240305	W	5/03/24		2 x P	2	x											
	0229_QC251_240305	S	5/03/24		1 x Jar	1		x										
	0229_QC252_240307	W	7/03/24		2 x P	2	x											
	0229_QC500_240308	W	8/03/24		2 x P	2	x											

RELINQUISHED BY:		RECEIVED BY	7.4°C -	RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]	Date: 11/3/24	Name: [redacted]	Date: 11/3/24	Name:	Date:	Con' Note No:
Of: AECOM	Time: 13:40	Of: TSV	Time: 1:42 -	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.
Soil Container Codes: Jar = Unpreserved glass jar

COC Page 1 of 1

1076794

Appendix E

Laboratory Analytical Reports

CERTIFICATE OF ANALYSIS

Work Order	: **ET2401536**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 12-Mar-2024 07:45
Order number	: 60612487_3.1	Date Analysis Commenced	: 14-Mar-2024
C-O-C number	: 64770	Issue Date	: 20-Mar-2024 16:29
Sampler	: [redacted]		
Site	: QLD_0229		
Quote number	: EB23AECOMAU0017		
No. of samples received	: 5		
No. of samples analysed	: 5		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: Poor matrix spike recovery for sample EM2401539-073 due to sample matrix interference.
- All remaining analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD212_240307	0229_SD211_240307	----	----	----
			Sampling date / time	07-Mar-2024 07:50	07-Mar-2024 08:10	----	----	----
Compound	CAS Number	LOR	Unit	ET2401536-003	ET2401536-004	--------	--------	--------
				Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**22.6**	**25.6**	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	**0.0008**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	**0.0002**	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD212_240307	0229_SD211_240307	----	----	----
				Sampling date / time	07-Mar-2024 07:50	07-Mar-2024 08:10	----	----	----
Compound	CAS Number	LOR	Unit		ET2401536-003	ET2401536-004	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	**0.0010**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	**0.0008**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	**0.0008**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**115**	**93.2**	----	----	----
13C8-PFOA	----	0.0002	%		**102**	**104**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW212_240307	0229_SW211_240307	0229_QC503_240308	----	----
				Sampling date / time	07-Mar-2024 07:50	07-Mar-2024 08:10	08-Mar-2024 17:00	----	----
Compound	CAS Number	LOR	Unit		ET2401536-001	ET2401536-002	ET2401536-005	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.02**	<0.02	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.04**	**0.06**	<0.01	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.03**	**0.03**	<0.01	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_SW212_240307	0229_SW211_240307	0229_QC503_240308	----	----
			Sampling date / time	07-Mar-2024 07:50	07-Mar-2024 08:10	08-Mar-2024 17:00	----	----
Compound	CAS Number	LOR	Unit	ET2401536-001	ET2401536-002	ET2401536-005	--------	--------
				Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**0.07**	**0.11**	<0.01	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.07**	**0.09**	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.07**	**0.11**	<0.01	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**87.3**	**91.9**	**92.2**	----	----
13C8-PFOA	----	0.02	%	**94.1**	**94.7**	**98.8**	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(WATER) EP231S: PFAS Surrogate
(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(SOIL) EP231C: Perfluoroalkyl Sulfonamides
(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids
(SOIL) EP231P: PFAS Sums
(SOIL) EP231S: PFAS Surrogate
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ET2401536**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 12-Mar-2024
Site	: QLD_0229	Issue Date	: 20-Mar-2024
Sampler	: [redacted]	No. of samples received	: 5
Order number	: 60612487_3.1	No. of samples analysed	: 5

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231B: Perfluoroalkyl Carboxylic Acids	ET2401539--073	Anonymous	**Perfluorobutanoic acid (PFBA)**	375-22-4	64.2 %	73.0-129%	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	8.33	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055)							
0229_SD212_240307, 0229_SD211_240307	**07-Mar-2024**	**----**	----	**----**	**15-Mar-2024**	21-Mar-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0229_SD212_240307, 0229_SD211_240307	**07-Mar-2024**	**14-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	23-Apr-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
0229_SD212_240307, 0229_SD211_240307	**07-Mar-2024**	**14-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	23-Apr-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
0229_SD212_240307, 0229_SD211_240307	**07-Mar-2024**	**14-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	23-Apr-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0229_SD212_240307, 0229_SD211_240307	**07-Mar-2024**	**14-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	23-Apr-2024	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
0229_SD212_240307, 0229_SD211_240307	**07-Mar-2024**	**14-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	23-Apr-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X) 0229_SW212_240307,	0229_SW211_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_QC503_240308		**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X) 0229_SW212_240307,	0229_SW211_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_QC503_240308		**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X) 0229_SW212_240307,	0229_SW211_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_QC503_240308		**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X) 0229_SW212_240307,	0229_SW211_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_QC503_240308		**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X) 0229_SW212_240307,	0229_SW211_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_QC503_240308		**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

QUALITY CONTROL REPORT

Work Order	: **ET2401536**	Page	: 1 of 10
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 12-Mar-2024
Order number	: 60612487_3.1	Date Analysis Commenced	: 14-Mar-2024
C-O-C number	: 64770	Issue Date	: 20-Mar-2024
Sampler	: [redacted]		
Site	: QLD_0229		
Quote number	: EB23AECOMAU0017		
No. of samples received	: 5		
No. of samples analysed	: 5		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5664106)									
ET2401536-003	0229_SD212_240307	EA055: Moisture Content	----	0.1	%	22.6	25.7	12.9	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662822)									
ET2401536-003	0229_SD212_240307	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
ET2401538-017	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0010	0.0011	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662822)									
ET2401536-003	0229_SD212_240307	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662822) - continued									
ET2401536-003	0229_SD212_240307	EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ET2401538-017	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662822)									
ET2401536-003	0229_SD212_240307	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2401538-017	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662822) - continued									
ET2401538-017	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662822)									
ET2401536-003	0229_SD212_240307	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2401538-017	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5662822)									
ET2401536-003	0229_SD212_240307	EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
ET2401538-017	Anonymous	EP231X: Sum of PFAS	----	0.0002	mg/kg	0.0010	0.0011	9.5	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0010	0.0011	9.5	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0010	0.0011	9.5	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.03	0.04	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.08	0.08	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.15	0.16	6.5	0% - 50%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.11	0.12	8.7	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.15	0.16	6.5	0% - 50%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662822)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00111 mg/kg	102	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	88.9	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00114 mg/kg	86.8	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	95.1	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	98.2	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00121 mg/kg	88.3	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662822)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	90.9	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.3	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.0	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.7	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.8	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.0	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662822)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	120	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.7	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.6	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	106	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662822)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662822) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	96.8	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00119 mg/kg	98.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	101	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00121 mg/kg	96.0	70.0	130
EP231P: PFAS Sums (QCLot: 5662822)								
EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662700)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	84.2	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	89.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.4	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	90.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	91.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662700)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	90.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	86.3	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	86.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	90.7	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	85.3	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	92.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	92.3	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	89.2	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	98.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662700)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	88.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.6	68.0	141

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662700) - continued								
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	100	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	81.8	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.3	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	95.3	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	83.6	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662700)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	94.4	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	95.1	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	96.5	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.7	70.0	130
EP231P: PFAS Sums (QCLot: 5662700)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662822)							
ET2401538-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00111 mg/kg	116	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00118 mg/kg	78.9	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00114 mg/kg	85.5	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	100	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	89.5	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00121 mg/kg	76.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662822)							
ET2401538-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	93.9	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	94.2	69.0	132

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662822) - continued							
ET2401538-001	Anonymous	EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	93.7	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	100	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	97.1	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	109	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	85.5	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	97.2	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	91.6	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	88.9	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	132	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662822)							
ET2401538-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	93.9	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	107	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	86.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	71.1	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	99.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	80.8	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	75.3	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662822)							
ET2401538-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	106	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00119 mg/kg	102	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	101	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00121 mg/kg	71.2	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662700)							
ET2401539-073	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	115	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	81.5	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	85.4	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	90.5	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	90.2	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	86.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662700)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662700) - continued							
ET2401539-073	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	# 64.2	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	87.8	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	81.6	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	84.6	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.5	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	85.3	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	83.7	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	90.2	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	85.9	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	90.1	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	86.6	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662700)							
ET2401539-073	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	92.1	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	94.4	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	87.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	76.6	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	91.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	89.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	82.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662700)							
ET2401539-073	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	85.0	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	98.7	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	99.0	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	70.7	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ET2401536**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: +61 7 3552 8616
Facsimile	: ----	Facsimile	:
Project	: QLD_0229_PFASOMP_24	Page	: 1 of 4
Order number	: 60612487_3.1	Quote number	: EB2023AECOMAU0017 (EB23AECOMAU0017)
C-O-C number	: 64770	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: QLD_0229		
Sampler	: [redacted]		

Dates

Date Samples Received	: 12-Mar-2024 07:45	Issue Date	: 13-Mar-2024
Client Requested Due Date	: 21-Mar-2024	Scheduled Reporting Date	: **21-Mar-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 7.0°C, 4.1°C, 5.9°C - Ice present
Receipt Detail	: Medium Esky	No. of samples received / analysed	: 5 / 5

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***Samples were originally received by Townsville, and forwarded to ALS Brisbane for analysis.**
- **The laboratory acknowledges your requested reporting date, however due to the analytical request and associated procedures involved the requested due date will not be possible. Please note the best practical due date has been assigned.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- All remaining analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
ET2401536-003	07-Mar-2024 07:50	0229_SD212_240307	✓	✓
ET2401536-004	07-Mar-2024 08:10	0229_SD211_240307	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
ET2401536-001	07-Mar-2024 07:50	0229_SW212_240307	✓
ET2401536-002	07-Mar-2024 08:10	0229_SW211_240307	✓
ET2401536-005	08-Mar-2024 17:00	0229_QC503_240308	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(SOIL) EP231C: Perfluoroalkyl Sulfonamides
(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids
(SOIL) EP231P: PFAS Sums
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

CERTIFICATE OF ANALYSIS

Work Order	: **ET2401537**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 12-Mar-2024 07:45
Order number	: 60612487_3.1	Date Analysis Commenced	: 15-Mar-2024
C-O-C number	: 64796	Issue Date	: 19-Mar-2024 17:56
Sampler	: [redacted]		
Site	: QLD_0229		
Quote number	: EB23AECOMAU0017		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: Poor matrix spike recovery for sample EM2401539-073 due to sample matrix interference.
- All remaining analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW226_240308	0229_QC502_240308	----	----	----
				Sampling date / time	08-Mar-2024 07:55	08-Mar-2024 17:00	----	----	----
Compound	CAS Number	LOR	Unit		ET2401537-001	ET2401537-002	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.06**	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.06**	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.01**	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW226_240308	0229_QC502_240308	----	----	----
				Sampling date / time	08-Mar-2024 07:55	08-Mar-2024 17:00	----	----	----
Compound	CAS Number	LOR	Unit		ET2401537-001	ET2401537-002	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.13**	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.07**	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.13**	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**91.5**	**93.7**	----	----	----
13C8-PFOA	----	0.02	%		**94.3**	**98.6**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ET2401537**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 12-Mar-2024
Site	: QLD_0229	Issue Date	: 19-Mar-2024
Sampler	: [redacted]	No. of samples received	: 2
Order number	: 60612487_3.1	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231B: Perfluoroalkyl Carboxylic Acids	ET2401539--073	Anonymous	**Perfluorobutanoic acid (PFBA)**	375-22-4	64.2 %	73.0-129%	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	8.33	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)		***Sample Date***	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0229_MW226_240308,	0229_QC502_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0229_MW226_240308,	0229_QC502_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0229_MW226_240308,	0229_QC502_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0229_MW226_240308,	0229_QC502_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0229_MW226_240308,	0229_QC502_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

QUALITY CONTROL REPORT

Work Order	: **ET2401537**	Page	: 1 of 6
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 12-Mar-2024
Order number	: 60612487_3.1	Date Analysis Commenced	: 15-Mar-2024
C-O-C number	: 64796	Issue Date	: 19-Mar-2024
Sampler	: [redacted]		
Site	: QLD_0229		
Quote number	: EB23AECOMAU0017		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.03	0.04	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.08	0.08	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662700) - continued									
ET2401539-069	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.15	0.16	6.5	0% - 50%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.11	0.12	8.7	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.15	0.16	6.5	0% - 50%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662700)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	84.2	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	89.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.4	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	90.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	91.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662700)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	90.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	86.3	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	86.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	90.7	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	85.3	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	92.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	92.3	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	89.2	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	98.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662700)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	88.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	100	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	81.8	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.3	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	95.3	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	83.6	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662700)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662700) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	94.4	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	95.1	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	96.5	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.7	70.0	130
EP231P: PFAS Sums (QCLot: 5662700)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662700)							
ET2401539-073	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	115	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	81.5	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	85.4	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	90.5	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	90.2	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	86.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662700)							
ET2401539-073	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	# 64.2	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	87.8	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	81.6	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	84.6	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.5	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	85.3	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	83.7	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	90.2	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	85.9	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	90.1	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	86.6	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662700)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662700) - continued							
ET2401539-073	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	92.1	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	94.4	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	87.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	76.6	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	91.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	89.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	82.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662700)							
ET2401539-073	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	85.0	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	98.7	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	99.0	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	70.7	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ET2401537**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
E-mail	: [redacted]	E-mail	: [redacted]@alsglobal.com
Telephone	: ----	Telephone	: +61 7 3552 8616
Facsimile	: ----	Facsimile	:
Project	: QLD_0229_PFASOMP_24	Page	: 1 of 3
Order number	: 60612487_3.1	Quote number	: EB2023AECOMAU0017 (EB23AECOMAU0017)
C-O-C number	: 64796	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: QLD_0229		
Sampler	: [redacted]		

Dates

Date Samples Received	: 12-Mar-2024 07:45	Issue Date	: 13-Mar-2024
Client Requested Due Date	: 21-Mar-2024	Scheduled Reporting Date	: **21-Mar-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 7.0°C, 4.1°C, 5.9°C - Ice present
Receipt Detail	: Medium Esky	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***Samples were originally received by Townsville, and forwarded to ALS Brisbane for analysis.**
- **The laboratory acknowledges your requested reporting date, however due to the analytical request and associated procedures involved the requested due date will not be possible. Please note the best practical due date has been assigned.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- All remaining analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
ET2401537-001	08-Mar-2024 07:55	0229_MW226_240308	✓
ET2401537-002	08-Mar-2024 17:00	0229_QC502_240308	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]
- A4 - AU Tax Invoice (INV) — Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **ET2401538**	Page	: 1 of 17
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
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Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 12-Mar-2024 07:45
Order number	: 60612487_3.1	Date Analysis Commenced	: 14-Mar-2024
C-O-C number	: 64547	Issue Date	: 20-Mar-2024 16:29
Sampler	: [redacted]		
Site	: QLD_0229		
Quote number	: EB23AECOMAU0017		
No. of samples received	: 34		
No. of samples analysed	: 34		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: Poor matrix spike recovery for sample EM2401539-073 due to sample matrix interference.
- $$ conducted by ALS Townsville, NATA accreditation no. 825, (Site no. 23472 for Chemical Testing and Site no. 23313 for Biological Testing)
- All remaining analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD243_240304	0229_SD232_240304	0229_SD242_240304	0229_SD220_240304	0229_SD217_240304
			Sampling date / time	04-Mar-2024 11:52	04-Mar-2024 12:19	04-Mar-2024 12:43	04-Mar-2024 13:23	04-Mar-2024 14:20
Compound	CAS Number	LOR	Unit	ET2401538-001	ET2401538-004	ET2401538-006	ET2401538-007	ET2401538-011
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**31.9**	**48.1**	**30.3**	**34.7**	**20.4**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0003**	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0002**	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0061**	**0.0005**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0002**	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	**0.0008**	**0.0047**	**0.0050**	**0.0027**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0004**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**0.0010**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD243_240304	0229_SD232_240304	0229_SD242_240304	0229_SD220_240304	0229_SD217_240304
			Sampling date / time	04-Mar-2024 11:52	04-Mar-2024 12:19	04-Mar-2024 12:43	04-Mar-2024 13:23	04-Mar-2024 14:20
Compound	CAS Number	LOR	Unit	ET2401538-001	ET2401538-004	ET2401538-006	ET2401538-007	ET2401538-011
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	<0.0002	**0.0008**	**0.0047**	**0.0122**	**0.0042**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	**0.0008**	**0.0047**	**0.0111**	**0.0032**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	**0.0008**	**0.0047**	**0.0118**	**0.0042**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**105**	**115**	**114**	**118**	**115**
13C8-PFOA	----	0.0002	%	**105**	**104**	**102**	**103**	**102**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_QC151_240304	0229_SD233_240304	0229_SD203_240304	0229_SD135_240304	0229_SD133_240304
			Sampling date / time	04-Mar-2024 14:21	04-Mar-2024 15:03	04-Mar-2024 15:32	04-Mar-2024 16:00	04-Mar-2024 16:14
Compound	CAS Number	LOR	Unit	ET2401538-012	ET2401538-013	ET2401538-016	ET2401538-017	ET2401538-019
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**23.7**	**48.8**	**26.6**	**19.2**	**16.4**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0006**	**0.0040**	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0030**	**0.0163**	**0.0004**	**0.0010**	**0.0005**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0007**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_QC151_240304	0229_SD233_240304	0229_SD203_240304	0229_SD135_240304	0229_SD133_240304
				Sampling date / time	04-Mar-2024 14:21	04-Mar-2024 15:03	04-Mar-2024 15:32	04-Mar-2024 16:00	04-Mar-2024 16:14
Compound	CAS Number	LOR	Unit		ET2401538-012	ET2401538-013	ET2401538-016	ET2401538-017	ET2401538-019
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0043**	**0.0209**	**0.0004**	**0.0010**	**0.0005**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0036**	**0.0203**	**0.0004**	**0.0010**	**0.0005**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0043**	**0.0205**	**0.0004**	**0.0010**	**0.0005**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**106**	**102**	**113**	**102**	**104**
13C8-PFOA	----	0.0002	%		**102**	**99.2**	**100**	**100**	**102**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW243_240304	0229_SW232_240304	0229_SW242_240304	0229_SW220_240304	0229_SW217_240304
				Sampling date / time	04-Mar-2024 11:53	04-Mar-2024 12:15	04-Mar-2024 12:42	04-Mar-2024 13:24	04-Mar-2024 14:19
Compound	CAS Number	LOR	Unit		ET2401538-002	ET2401538-003	ET2401538-005	ET2401538-008	ET2401538-009
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.02**	**0.04**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.02**	**0.05**	**0.05**	**0.19**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	**0.05**	**0.12**	**0.18**	**0.01**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.03**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_SW243_240304	0229_SW232_240304	0229_SW242_240304	0229_SW220_240304	0229_SW217_240304
			Sampling date / time	04-Mar-2024 11:53	04-Mar-2024 12:15	04-Mar-2024 12:42	04-Mar-2024 13:24	04-Mar-2024 14:19
Compound	CAS Number	LOR	Unit	ET2401538-002	ET2401538-003	ET2401538-005	ET2401538-008	ET2401538-009
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**0.04**	**0.10**	**0.19**	**0.44**	**0.01**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.04**	**0.10**	**0.17**	**0.37**	**0.01**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.04**	**0.10**	**0.19**	**0.44**	**0.01**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**87.4**	**95.3**	**88.4**	**88.8**	**83.5**
13C8-PFOA	----	0.02	%	**97.3**	**100**	**99.1**	**99.7**	**101**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC150_240304	0229_SW233_240304	0229_SW203_240304	0229_SW135_240304	0229_QC350_240304
				Sampling date / time	04-Mar-2024 14:20	04-Mar-2024 15:04	04-Mar-2024 15:32	04-Mar-2024 16:01	04-Mar-2024 16:42
Compound	CAS Number	LOR	Unit		ET2401538-010	ET2401538-014	ET2401538-015	ET2401538-018	ET2401538-020
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.05**	**0.03**	**0.03**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.03**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.01**	**0.23**	**0.14**	**0.12**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.01**	**0.33**	**0.20**	**0.09**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.04**	**0.03**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.01**	**0.01**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC150_240304	0229_SW233_240304	0229_SW203_240304	0229_SW135_240304	0229_QC350_240304
				Sampling date / time	04-Mar-2024 14:20	04-Mar-2024 15:04	04-Mar-2024 15:32	04-Mar-2024 16:01	04-Mar-2024 16:42
Compound	CAS Number	LOR	Unit		ET2401538-010	ET2401538-014	ET2401538-015	ET2401538-018	ET2401538-020
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.02**	**0.69**	**0.41**	**0.24**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.02**	**0.56**	**0.34**	**0.21**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.02**	**0.66**	**0.41**	**0.24**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**90.8**	**92.7**	**90.2**	**86.6**	**90.3**
13C8-PFOA	----	0.02	%		**101**	**98.6**	**97.1**	**97.1**	**102**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC351_240304	0229_SW133_240305	0229_QC352_240305	0229_QC550_240304	0229_MW232_240307
				Sampling date / time	04-Mar-2024 16:46	05-Mar-2024 15:10	05-Mar-2024 19:00	04-Mar-2024 10:00	07-Mar-2024 09:10
Compound	CAS Number	LOR	Unit		ET2401538-021	ET2401538-022	ET2401538-023	ET2401538-024	ET2401538-025
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.12**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.06**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.10**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC351_240304	0229_SW133_240305	0229_QC352_240305	0229_QC550_240304	0229_MW232_240307
				Sampling date / time	04-Mar-2024 16:46	05-Mar-2024 15:10	05-Mar-2024 19:00	04-Mar-2024 10:00	07-Mar-2024 09:10
Compound	CAS Number	LOR	Unit		ET2401538-021	ET2401538-022	ET2401538-023	ET2401538-024	ET2401538-025
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.28**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.16**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.28**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**92.8**	**87.8**	**96.7**	**91.9**	**86.7**
13C8-PFOA	----	0.02	%		**96.5**	**98.9**	**103**	**101**	**99.4**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW220S_240307	0229_MW205S_240307	0229_MW233_240307	0229_MW212_240307	0229_MW217_240307
				Sampling date / time	07-Mar-2024 09:57	07-Mar-2024 10:15	07-Mar-2024 10:37	07-Mar-2024 10:51	07-Mar-2024 13:12
Compound	CAS Number	LOR	Unit		ET2401538-026	ET2401538-027	ET2401538-028	ET2401538-029	ET2401538-030
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.11**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.05**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.28**	**0.02**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	**0.02**	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW220S_240307	0229_MW205S_240307	0229_MW233_240307	0229_MW212_240307	0229_MW217_240307
				Sampling date / time	07-Mar-2024 09:57	07-Mar-2024 10:15	07-Mar-2024 10:37	07-Mar-2024 10:51	07-Mar-2024 13:12
Compound	CAS Number	LOR	Unit		ET2401538-026	ET2401538-027	ET2401538-028	ET2401538-029	ET2401538-030
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.46**	**0.04**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.30**	**0.04**	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.41**	**0.04**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**82.5**	**88.3**	**88.7**	**81.2**	**92.4**
13C8-PFOA	----	0.02	%		**98.4**	**98.5**	**102**	**97.3**	**92.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC152_240307	0229_MW235S_240307	0229_MW236S_240307	0229_QC353_240307	----
				Sampling date / time	07-Mar-2024 12:20	07-Mar-2024 00:45	07-Mar-2024 13:17	07-Mar-2024 13:20	----
Compound	CAS Number	LOR	Unit		ET2401538-031	ET2401538-032	ET2401538-033	ET2401538-034	--------
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.02**	**0.08**	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**0.12**	<0.01	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**0.12**	<0.01	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC152_240307	0229_MW235S_240307	0229_MW236S_240307	0229_QC353_240307	----
				Sampling date / time	07-Mar-2024 12:20	07-Mar-2024 00:45	07-Mar-2024 13:17	07-Mar-2024 13:20	----
Compound	CAS Number	LOR	Unit		ET2401538-031	ET2401538-032	ET2401538-033	ET2401538-034	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.02**	**0.32**	<0.01	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.24**	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.02**	**0.32**	<0.01	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**84.7**	**91.2**	**91.1**	**97.5**	----
13C8-PFOA	----	0.02	%		**94.3**	**97.6**	**91.6**	**94.1**	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(WATER) EP231S: PFAS Surrogate
(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(SOIL) EP231C: Perfluoroalkyl Sulfonamides
(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids
(SOIL) EP231P: PFAS Sums
(SOIL) EP231S: PFAS Surrogate
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ET2401538**	Page	: 1 of 8
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 12-Mar-2024
Site	: QLD_0229	Issue Date	: 20-Mar-2024
Sampler	: [redacted]	No. of samples received	: 34
Order number	: 60612487_3.1	No. of samples analysed	: 34

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231B: Perfluoroalkyl Carboxylic Acids	ET2401539--073	Anonymous	**Perfluorobutanoic acid (PFBA)**	375-22-4	64.2 %	73.0-129%	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	31	9.68	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055)							
0229_SD243_240304, 0229_SD232_240304, 0229_SD242_240304, 0229_SD220_240304, 0229_SD217_240304, 0229_QC151_240304, 0229_SD233_240304, 0229_SD203_240304, 0229_SD135_240304, 0229_SD133_240304	**04-Mar-2024**	**----**	----	----	**15-Mar-2024**	18-Mar-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0229_SD243_240304, 0229_SD232_240304, 0229_SD242_240304, 0229_SD220_240304, 0229_SD217_240304, 0229_QC151_240304, 0229_SD233_240304, 0229_SD203_240304, 0229_SD135_240304, 0229_SD133_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**18-Mar-2024**	23-Apr-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
0229_SD243_240304, 0229_SD232_240304, 0229_SD242_240304, 0229_SD220_240304, 0229_SD217_240304, 0229_QC151_240304, 0229_SD233_240304, 0229_SD203_240304, 0229_SD135_240304, 0229_SD133_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**18-Mar-2024**	23-Apr-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
0229_SD243_240304, 0229_SD232_240304, 0229_SD242_240304, 0229_SD220_240304, 0229_SD217_240304, 0229_QC151_240304, 0229_SD233_240304, 0229_SD203_240304, 0229_SD135_240304, 0229_SD133_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**18-Mar-2024**	23-Apr-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0229_SD243_240304, 0229_SD232_240304, 0229_SD242_240304, 0229_SD220_240304, 0229_SD217_240304, 0229_QC151_240304, 0229_SD233_240304, 0229_SD203_240304, 0229_SD135_240304, 0229_SD133_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**18-Mar-2024**	23-Apr-2024	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
0229_SD243_240304, 0229_SD232_240304, 0229_SD242_240304, 0229_SD220_240304, 0229_SD217_240304, 0229_QC151_240304, 0229_SD233_240304, 0229_SD203_240304, 0229_SD135_240304, 0229_SD133_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**18-Mar-2024**	23-Apr-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0229_SW243_240304, 0229_SW232_240304, 0229_SW242_240304, 0229_SW220_240304, 0229_SW217_240304, 0229_QC150_240304, 0229_SW233_240304, 0229_SW203_240304, 0229_SW135_240304, 0229_QC350_240304, 0229_QC351_240304, 0229_QC550_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**15-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW133_240305, 0229_QC352_240305	**05-Mar-2024**	**14-Mar-2024**	01-Sep-2024	✓	**15-Mar-2024**	01-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW232_240307, 0229_MW220S_240307, 0229_MW205S_240307, 0229_MW233_240307, 0229_MW212_240307	**07-Mar-2024**	**14-Mar-2024**	03-Sep-2024	✓	**15-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW217_240307, 0229_QC152_240307, 0229_MW235S_240307, 0229_MW236S_240307, 0229_QC353_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	03-Sep-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0229_SW243_240304, 0229_SW232_240304, 0229_SW242_240304, 0229_SW220_240304, 0229_SW217_240304, 0229_QC150_240304, 0229_SW233_240304, 0229_SW203_240304, 0229_SW135_240304, 0229_QC350_240304, 0229_QC351_240304, 0229_QC550_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**15-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW133_240305, 0229_QC352_240305	**05-Mar-2024**	**14-Mar-2024**	01-Sep-2024	✓	**15-Mar-2024**	01-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW232_240307, 0229_MW220S_240307, 0229_MW205S_240307, 0229_MW233_240307, 0229_MW212_240307	**07-Mar-2024**	**14-Mar-2024**	03-Sep-2024	✓	**15-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW217_240307, 0229_QC152_240307, 0229_MW235S_240307, 0229_MW236S_240307, 0229_QC353_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	03-Sep-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0229_SW243_240304, 0229_SW232_240304, 0229_SW242_240304, 0229_SW220_240304, 0229_SW217_240304, 0229_QC150_240304, 0229_SW233_240304, 0229_SW203_240304, 0229_SW135_240304, 0229_QC350_240304, 0229_QC351_240304, 0229_QC550_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**15-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW133_240305, 0229_QC352_240305	**05-Mar-2024**	**14-Mar-2024**	01-Sep-2024	✓	**15-Mar-2024**	01-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW232_240307, 0229_MW220S_240307, 0229_MW205S_240307, 0229_MW233_240307, 0229_MW212_240307	**07-Mar-2024**	**14-Mar-2024**	03-Sep-2024	✓	**15-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW217_240307, 0229_QC152_240307, 0229_MW235S_240307, 0229_MW236S_240307, 0229_QC353_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	03-Sep-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0229_SW243_240304, 0229_SW232_240304, 0229_SW242_240304, 0229_SW220_240304, 0229_SW217_240304, 0229_QC150_240304, 0229_SW233_240304, 0229_SW203_240304, 0229_SW135_240304, 0229_QC350_240304, 0229_QC351_240304, 0229_QC550_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**15-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW133_240305, 0229_QC352_240305	**05-Mar-2024**	**14-Mar-2024**	01-Sep-2024	✓	**15-Mar-2024**	01-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW232_240307, 0229_MW220S_240307, 0229_MW205S_240307, 0229_MW233_240307, 0229_MW212_240307	**07-Mar-2024**	**14-Mar-2024**	03-Sep-2024	✓	**15-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW217_240307, 0229_QC152_240307, 0229_MW235S_240307, 0229_MW236S_240307, 0229_QC353_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	03-Sep-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0229_SW243_240304, 0229_SW232_240304, 0229_SW242_240304, 0229_SW220_240304, 0229_SW217_240304, 0229_QC150_240304, 0229_SW233_240304, 0229_SW203_240304, 0229_SW135_240304, 0229_QC350_240304, 0229_QC351_240304, 0229_QC550_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**15-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X) 0229_SW133_240305, 0229_QC352_240305	**05-Mar-2024**	**14-Mar-2024**	01-Sep-2024	✓	**15-Mar-2024**	01-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW232_240307, 0229_MW220S_240307, 0229_MW205S_240307, 0229_MW233_240307, 0229_MW212_240307	**07-Mar-2024**	**14-Mar-2024**	03-Sep-2024	✓	**15-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0229_MW217_240307, 0229_QC152_240307, 0229_MW235S_240307, 0229_MW236S_240307, 0229_QC353_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**18-Mar-2024**	03-Sep-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	31	**9.68**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

QUALITY CONTROL REPORT

Work Order	: **ET2401538**	Page	: 1 of 15
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 12-Mar-2024
Order number	: 60612487_3.1	Date Analysis Commenced	: 14-Mar-2024
C-O-C number	: 64547	Issue Date	: 20-Mar-2024
Sampler	: [redacted]		
Site	: QLD_0229		
Quote number	: EB23AECOMAU0017		
No. of samples received	: 34		
No. of samples analysed	: 34		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5664107)									
ET2401538-001	0229_SD243_240304	EA055: Moisture Content	----	0.1	%	31.9	31.4	1.5	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662822)									
ET2401536-003	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
ET2401538-017	0229_SD135_240304	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0010	0.0011	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662822)									
ET2401536-003	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662822) - continued									
ET2401536-003	Anonymous	EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ET2401538-017	0229_SD135_240304	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662822)									
ET2401536-003	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2401538-017	0229_SD135_240304	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662822) - continued									
ET2401538-017	0229_SD135_240304	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662822)									
ET2401536-003	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2401538-017	0229_SD135_240304	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5662822)									
ET2401536-003	Anonymous	EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
ET2401538-017	0229_SD135_240304	EP231X: Sum of PFAS	----	0.0002	mg/kg	0.0010	0.0011	9.5	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0010	0.0011	9.5	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0010	0.0011	9.5	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662641)									
ET2401538-002	0229_SW243_240304	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.02	0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662641) - continued									
ET2401538-014	0229_SW233_240304	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.23	0.22	0.0	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.33	0.32	4.1	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.05	0.04	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.03	0.04	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.08	0.08	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662641)									
ET2401538-002	0229_SW243_240304	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ET2401538-014	0229_SW233_240304	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.02	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662700)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662700) - continued									
ET2401539-069	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662641)									
ET2401538-002	0229_SW243_240304	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ET2401538-014	0229_SW233_240304	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662700) - continued									
ET2401539-069	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662641)									
ET2401538-002	0229_SW243_240304	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ET2401538-014	0229_SW233_240304	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5662641)									
ET2401538-002	0229_SW243_240304	EP231X: Sum of PFAS	----	0.01	µg/L	0.04	0.03	28.6	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231P: PFAS Sums (QC Lot: 5662641) - continued									
ET2401538-002	0229_SW243_240304	EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.04	0.03	28.6	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.04	0.03	28.6	No Limit
ET2401538-014	0229_SW233_240304	EP231X: Sum of PFAS	----	0.01	µg/L	0.69	0.67	2.9	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.56	0.54	3.6	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.66	0.64	3.1	0% - 20%
EP231P: PFAS Sums (QC Lot: 5662700)									
ET2401539-069	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.15	0.16	6.5	0% - 50%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.11	0.12	8.7	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.15	0.16	6.5	0% - 50%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662822)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00111 mg/kg	102	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	88.9	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00114 mg/kg	86.8	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	95.1	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	98.2	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00121 mg/kg	88.3	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662822)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	90.9	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.3	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.0	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.7	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.8	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.0	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662822)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	120	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.7	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.6	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	106	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662822)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662822) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	96.8	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00119 mg/kg	98.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	101	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00121 mg/kg	96.0	70.0	130
EP231P: PFAS Sums (QCLot: 5662822)								
EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662641)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	100	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	94.8	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	94.8	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	94.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	90.5	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	91.6	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662700)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	84.2	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	89.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.4	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	90.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	91.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662641)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	98.3	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	89.3	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	98.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	96.9	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	99.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	87.7	71.0	129

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662641) - continued								
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	92.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	95.1	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	81.3	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	94.0	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662700)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	90.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	86.3	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	86.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	90.7	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	85.3	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	92.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	92.3	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	89.2	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	98.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662641)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	90.5	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	124	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	113	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	90.6	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	95.7	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	86.2	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.5	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662700)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	88.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	100	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	81.8	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.3	70.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662700) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	95.3	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	83.6	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662641)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	93.1	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	96.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	99.5	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	85.2	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662700)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	94.4	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	95.1	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	96.5	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.7	70.0	130
EP231P: PFAS Sums (QCLot: 5662641)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5662700)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662822)							
ET2401538-001	0229_SD243_240304	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00111 mg/kg	116	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00118 mg/kg	78.9	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00114 mg/kg	85.5	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	100	70.0	132

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662822) - continued							
ET2401538-001	0229_SD243_240304	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	89.5	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00121 mg/kg	76.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662822)							
ET2401538-001	0229_SD243_240304	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	93.9	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	94.2	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	93.7	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	100	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	97.1	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	109	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	85.5	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	97.2	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	91.6	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	88.9	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	132	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662822)							
ET2401538-001	0229_SD243_240304	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	93.9	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	107	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	86.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	71.1	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	99.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	80.8	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	75.3	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662822)							
ET2401538-001	0229_SD243_240304	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	106	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00119 mg/kg	102	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	101	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00121 mg/kg	71.2	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662641)							
ET2401538-008	0229_SW220_240304	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	106	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	89.4	71.0	127

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662641) - continued							
ET2401538-008	0229_SW220_240304	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	82.0	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	89.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	86.9	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	83.1	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662700)							
ET2401539-073	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	115	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	81.5	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	85.4	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	90.5	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	90.2	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	86.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662641)							
ET2401538-008	0229_SW220_240304	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	94.0	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	81.9	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	80.0	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	93.1	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.4	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	87.1	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	99.5	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	107	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	92.4	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	98.2	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	90.8	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662700)							
ET2401539-073	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	# 64.2	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	87.8	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	81.6	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	84.6	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.5	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	85.3	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	83.7	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	90.2	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	85.9	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	90.1	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	86.6	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662641)							
ET2401538-008	0229_SW220_240304	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	101	67.0	137

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662641) - continued							
ET2401538-008	0229_SW220_240304	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	104	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	93.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	100	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	104	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	104	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	89.5	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662700)							
ET2401539-073	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	92.1	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	94.4	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	87.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	76.6	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	91.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	89.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	82.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662641)							
ET2401538-008	0229_SW220_240304	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	93.6	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	99.0	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	101	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	78.3	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662700)							
ET2401539-073	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	85.0	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	98.7	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	99.0	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	70.7	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ET2401538**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: +61 7 3552 8616
Facsimile	: ----	Facsimile	:
Project	: QLD_0229_PFASOMP_24	Page	: 1 of 5
Order number	: 60612487_3.1	Quote number	: EB2023AECOMAU0017 (EB23AECOMAU0017)
C-O-C number	: 64547	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: QLD_0229		
Sampler	: [redacted]		

Dates

Date Samples Received	: 12-Mar-2024 07:45	Issue Date	: 13-Mar-2024
Client Requested Due Date	: 21-Mar-2024	Scheduled Reporting Date	: **21-Mar-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 7.0°C, 4.1°C, 5.9°C - Ice present
Receipt Detail	: Medium Esky	No. of samples received / analysed	: 34 / 34

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***Samples were originally received by Townsville, and forwarded to ALS Brisbane for analysis.**
- **The laboratory acknowledges your requested reporting date, however due to the analytical request and associated procedures involved the requested due date will not be possible. Please note the best practical due date has been assigned.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- $$ conducted by ALS Townsville, NATA accreditation no. 825, (Site no. 23472 for Chemical Testing and Site no. 23313 for Biological Testing)
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- All remaining analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
ET2401538-001	04-Mar-2024 11:52	0229_SD243_240304	✓	✓
ET2401538-004	04-Mar-2024 12:19	0229_SD232_240304	✓	✓
ET2401538-006	04-Mar-2024 12:43	0229_SD242_240304	✓	✓
ET2401538-007	04-Mar-2024 13:23	0229_SD220_240304	✓	✓
ET2401538-011	04-Mar-2024 14:20	0229_SD217_240304	✓	✓
ET2401538-012	04-Mar-2024 14:21	0229_QC151_240304	✓	✓
ET2401538-013	04-Mar-2024 15:03	0229_SD233_240304	✓	✓
ET2401538-016	04-Mar-2024 15:32	0229_SD203_240304	✓	✓
ET2401538-017	04-Mar-2024 16:00	0229_SD135_240304	✓	✓
ET2401538-019	04-Mar-2024 16:14	0229_SD133_240304	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
ET2401538-002	04-Mar-2024 11:53	0229_SW243_240304	✓
ET2401538-003	04-Mar-2024 12:15	0229_SW232_240304	✓
ET2401538-005	04-Mar-2024 12:42	0229_SW242_240304	✓
ET2401538-008	04-Mar-2024 13:24	0229_SW220_240304	✓
ET2401538-009	04-Mar-2024 14:19	0229_SW217_240304	✓
ET2401538-010	04-Mar-2024 14:20	0229_QC150_240304	✓
ET2401538-014	04-Mar-2024 15:04	0229_SW233_240304	✓
ET2401538-015	04-Mar-2024 15:32	0229_SW203_240304	✓
ET2401538-018	04-Mar-2024 16:01	0229_SW135_240304	✓
ET2401538-020	04-Mar-2024 16:42	0229_QC350_240304	✓
ET2401538-021	04-Mar-2024 16:46	0229_QC351_240304	✓
ET2401538-022	05-Mar-2024 15:10	0229_SW133_240305	✓
ET2401538-023	05-Mar-2024 19:00	0229_QC352_240305	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
ET2401538-024	04-Mar-2024 10:00	0229_QC550_240304	✓
ET2401538-025	07-Mar-2024 09:10	0229_MW232_240307	✓
ET2401538-026	07-Mar-2024 09:57	0229_MW220S_240307	✓
ET2401538-027	07-Mar-2024 10:15	0229_MW205S_240307	✓
ET2401538-028	07-Mar-2024 10:37	0229_MW233_240307	✓
ET2401538-029	07-Mar-2024 10:51	0229_MW212_240307	✓
ET2401538-030	07-Mar-2024 13:12	0229_MW217_240307	✓
ET2401538-031	07-Mar-2024 12:20	0229_QC152_240307	✓
ET2401538-032	07-Mar-2024 00:45	0229_MW235S_240307	✓
ET2401538-033	07-Mar-2024 13:17	0229_MW236S_240307	✓
ET2401538-034	07-Mar-2024 13:20	0229_QC353_240307	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(SOIL) EP231C: Perfluoroalkyl Sulfonamides
(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids
(SOIL) EP231P: PFAS Sums
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)
(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **ET2401539**	Page	: 1 of 39
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 12-Mar-2024 07:45
Order number	: 60612487_3.1	Date Analysis Commenced	: 14-Mar-2024
C-O-C number	: 64506	Issue Date	: 21-Mar-2024 17:56
Sampler	: [redacted]		
Site	: QLD_0229		
Quote number	: EB23AECOMAU0017		
No. of samples received	: 79		
No. of samples analysed	: 79		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: Poor matrix spike recovery for sample ET2401539-073 due to sample matrix interference.
- EP231X: Poor matrix spike recovery for sample ET2401539-003 due to sample matrix interference.
- EP231X: LOR for particular sample ET2401539-036 has been raised due to the high moisture content.
- EP231X: Sample ET2401539-056 required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- All remaining analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results.
- Sample 36 analysed and reported "as received" as per Carsten.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0229_SD110_240304	0229_SD139_240304	0229_SD113_240304	0229_QC101_240304	0229_SD119_240304
			Sampling date / time	04-Mar-2024 11:41	04-Mar-2024 12:10	04-Mar-2024 12:33	04-Mar-2024 12:35	04-Mar-2024 12:55
Compound	CAS Number	LOR	Unit	ET2401539-005	ET2401539-007	ET2401539-010	ET2401539-012	ET2401539-013
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**11.2**	**26.9**	**29.8**	**28.3**	**22.5**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	**0.0007**	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	**0.0009**	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0015**	**0.0182**	<0.0002	<0.0002	**0.0003**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	**0.0055**	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0245**	**0.148**	**0.0008**	**0.0010**	**0.0011**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0012**	**0.0004**	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	**0.0002**	**0.0002**	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0004**	**0.0011**	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	**0.0003**	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	**0.0017**	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	**0.0003**	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	**0.0002**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	**0.0003**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0229_SD110_240304	0229_SD139_240304	0229_SD113_240304	0229_QC101_240304	0229_SD119_240304
			Sampling date / time	04-Mar-2024 11:41	04-Mar-2024 12:10	04-Mar-2024 12:33	04-Mar-2024 12:35	04-Mar-2024 12:55
Compound	CAS Number	LOR	Unit	ET2401539-005	ET2401539-007	ET2401539-010	ET2401539-012	ET2401539-013
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0283**	**0.178**	**0.0008**	**0.0010**	**0.0014**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0260**	**0.166**	**0.0008**	**0.0010**	**0.0014**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0266**	**0.170**	**0.0008**	**0.0010**	**0.0014**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**83.8**	**90.0**	**98.2**	**92.3**	**92.1**
13C8-PFOA	----	0.0002	%	**85.2**	**85.2**	**94.8**	**92.2**	**95.1**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0229_SD120_240304	0229_SD140_240304	0229_SD132_240304	0229_SD130_240304	0229_SD128_240304
			Sampling date / time	04-Mar-2024 13:12	04-Mar-2024 13:27	04-Mar-2024 14:16	04-Mar-2024 14:30	04-Mar-2024 14:53
Compound	CAS Number	LOR	Unit	ET2401539-016	ET2401539-017	ET2401539-020	ET2401539-023	ET2401539-025
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**22.9**	**30.8**	**18.8**	**35.0**	**28.0**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	**0.0018**	<0.0002	**0.0006**	**0.0004**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0009**	**0.0090**	**0.0019**	**0.0047**	**0.0141**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	**0.0004**	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0003**	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0229_SD120_240304	0229_SD140_240304	0229_SD132_240304	0229_SD130_240304	0229_SD128_240304
			Sampling date / time	04-Mar-2024 13:12	04-Mar-2024 13:27	04-Mar-2024 14:16	04-Mar-2024 14:30	04-Mar-2024 14:53
Compound	CAS Number	LOR	Unit	ET2401539-016	ET2401539-017	ET2401539-020	ET2401539-023	ET2401539-025
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0009**	**0.0116**	**0.0019**	**0.0056**	**0.0145**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0009**	**0.0108**	**0.0019**	**0.0053**	**0.0145**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0009**	**0.0114**	**0.0019**	**0.0053**	**0.0145**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**83.7**	**90.8**	**103**	**90.2**	**94.2**
13C8-PFOA	----	0.0002	%	**90.3**	**95.2**	**85.0**	**85.8**	**88.8**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0229_SD126_240304	0229_QC103_240304	0229_SD136_240304	0229_SD121_240304	----
			Sampling date / time	04-Mar-2024 15:06	04-Mar-2024 15:07	04-Mar-2024 15:45	04-Mar-2024 15:57	----
Compound	CAS Number	LOR	Unit	ET2401539-027	ET2401539-028	ET2401539-031	ET2401539-034	--------
				Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**30.1**	**26.5**	**18.8**	**34.4**	**----**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0006**	**----**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0006**	**0.0006**	**0.0003**	**0.0032**	**----**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	**----**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	**----**
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**----**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0229_SD126_240304	0229_QC103_240304	0229_SD136_240304	0229_SD121_240304	----
			Sampling date / time	04-Mar-2024 15:06	04-Mar-2024 15:07	04-Mar-2024 15:45	04-Mar-2024 15:57	----
Compound	CAS Number	LOR	Unit	ET2401539-027	ET2401539-028	ET2401539-031	ET2401539-034	--------
				Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0006**	**0.0006**	**0.0003**	**0.0038**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0006**	**0.0006**	**0.0003**	**0.0038**	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0006**	**0.0006**	**0.0003**	**0.0038**	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**84.2**	**83.1**	**88.7**	**97.5**	----
13C8-PFOA	----	0.0002	%	**95.7**	**91.8**	**92.1**	**82.5**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD144_240304	0229_SD109_240304	0229_SD245_240307	0229_SD227_240307	0229_SD244_240307
			Sampling date / time	04-Mar-2024 11:21	04-Mar-2024 11:40	07-Mar-2024 08:55	07-Mar-2024 10:17	07-Mar-2024 12:53
Compound	CAS Number	LOR	Unit	ET2401539-001	ET2401539-003	ET2401539-036	ET2401539-038	ET2401539-040
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**32.2**	**27.6**	**72.9**	**21.1**	**35.1**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	**0.0005**	**0.0008**	<0.0005	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	**0.0008**	<0.0005	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0023**	**0.0095**	<0.0005	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	**0.0003**	**0.0009**	<0.0012	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0393**	**0.0500**	<0.0005	<0.0002	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0003**	**0.0006**	<0.0005	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.002	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	**0.0002**	**0.0003**	<0.0005	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0004**	**0.0019**	<0.0005	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	**0.0003**	<0.0005	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0003**	**0.0008**	<0.0005	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	**0.0003**	<0.0005	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	**0.0012**	<0.0005	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD144_240304	0229_SD109_240304	0229_SD245_240307	0229_SD227_240307	0229_SD244_240307
				Sampling date / time	04-Mar-2024 11:21	04-Mar-2024 11:40	07-Mar-2024 08:55	07-Mar-2024 10:17	07-Mar-2024 12:53
Compound	CAS Number	LOR	Unit		ET2401539-001	ET2401539-003	ET2401539-036	ET2401539-038	ET2401539-040
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0436**	**0.0674**	<0.0005	<0.0002	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0416**	**0.0595**	<0.0005	<0.0002	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0430**	**0.0636**	<0.0005	<0.0002	<0.0002
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**81.8**	**83.5**	**73.0**	**77.8**	**81.0**
13C8-PFOA	----	0.0002	%		**85.0**	**73.8**	**82.2**	**81.8**	**86.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD129_240304	0229_SD134_240304	----	----	----
				Sampling date / time	08-Mar-2024 10:07	04-Mar-2024 12:08	----	----	----
Compound	CAS Number	LOR	Unit		ET2401539-077	ET2401539-078	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**26.5**	**23.1**	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0006**	<0.0002	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD129_240304	0229_SD134_240304	----	----	----
				Sampling date / time	08-Mar-2024 10:07	04-Mar-2024 12:08	----	----	----
Compound	CAS Number	LOR	Unit		ET2401539-077	ET2401539-078	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0006**	<0.0002	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0006**	<0.0002	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0006**	<0.0002	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**83.0**	**95.8**	----	----	----
13C8-PFOA	----	0.0002	%		**88.9**	**100**	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0229_SW110_240304	----	----	----	----
				Sampling date / time	04-Mar-2024 11:43	----	----	----	----
Compound	CAS Number	LOR	Unit		ET2401539-006	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.57**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**2.15**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**16.2**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**1.39**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**28.3**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		**0.02**	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.3**	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.74**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**3.67**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.47**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**1.24**	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.08**	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		**0.04**	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	0229_SW110_240304	----	----	----	----
				Sampling date / time	04-Mar-2024 11:43	----	----	----	----
Compound	CAS Number	LOR	Unit		ET2401539-006	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**56.2**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**44.5**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**52.5**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**110**	----	----	----	----
13C8-PFOA	----	0.02	%		**95.4**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW144_240304	0229_SW109_240304	0229_SW139_240304	0229_SW113_240304	0229_QC100_240304
				Sampling date / time	04-Mar-2024 11:21	04-Mar-2024 11:41	04-Mar-2024 12:10	04-Mar-2024 12:33	04-Mar-2024 12:34
Compound	CAS Number	LOR	Unit		ET2401539-002	ET2401539-004	ET2401539-008	ET2401539-009	ET2401539-011
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.04**	**1.96**	**0.03**	<0.02	**0.02**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**2.59**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.09**	**19.4**	**0.13**	**0.05**	**0.06**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**1.63**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.13**	**32.4**	**0.18**	**0.05**	**0.05**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	**0.02**	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.4**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.96**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.02**	**4.84**	**0.03**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.61**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**1.47**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.10**	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	**0.09**	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW144_240304	0229_SW109_240304	0229_SW139_240304	0229_SW113_240304	0229_QC100_240304
				Sampling date / time	04-Mar-2024 11:21	04-Mar-2024 11:41	04-Mar-2024 12:10	04-Mar-2024 12:33	04-Mar-2024 12:34
Compound	CAS Number	LOR	Unit		ET2401539-002	ET2401539-004	ET2401539-008	ET2401539-009	ET2401539-011
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.28**	**66.5**	**0.37**	**0.10**	**0.13**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.22**	**51.8**	**0.31**	**0.10**	**0.11**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.28**	**62.0**	**0.37**	**0.10**	**0.13**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**96.1**	**96.9**	**82.0**	**88.5**	**85.2**
13C8-PFOA	----	0.02	%		**97.3**	**95.6**	**98.2**	**100.0**	**99.9**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW119_240304	0229_SW120_240304	0229_SW140_240304	0229_SW134_240304	0229_SW132_240304
				Sampling date / time	04-Mar-2024 12:55	04-Mar-2024 13:11	04-Mar-2024 13:28	04-Mar-2024 14:02	04-Mar-2024 14:16
Compound	CAS Number	LOR	Unit		ET2401539-014	ET2401539-015	ET2401539-018	ET2401539-019	ET2401539-021
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.12**	**0.03**	**0.03**	<0.02	**0.03**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.07**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.41**	**0.10**	**0.11**	<0.01	**0.13**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.42**	**0.07**	**0.19**	<0.01	**0.23**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.13**	**0.02**	**0.02**	<0.02	**0.03**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.03**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_SW119_240304	0229_SW120_240304	0229_SW140_240304	0229_SW134_240304	0229_SW132_240304
			Sampling date / time	04-Mar-2024 12:55	04-Mar-2024 13:11	04-Mar-2024 13:28	04-Mar-2024 14:02	04-Mar-2024 14:16
Compound	CAS Number	LOR	Unit	ET2401539-014	ET2401539-015	ET2401539-018	ET2401539-019	ET2401539-021
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**1.25**	**0.22**	**0.35**	<0.01	**0.42**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.83**	**0.17**	**0.30**	<0.01	**0.36**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**1.16**	**0.22**	**0.35**	<0.01	**0.42**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**93.6**	**90.9**	**89.4**	**84.0**	**89.4**
13C8-PFOA	----	0.02	%	**98.8**	**100**	**97.5**	**97.4**	**96.8**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW130_240304	0229_SW129_240304	0229_SW128_240304	0229_SW126_240304	0229_QC102_240304
				Sampling date / time	04-Mar-2024 14:30	04-Mar-2024 14:42	04-Mar-2024 14:53	04-Mar-2024 15:07	04-Mar-2024 15:08
Compound	CAS Number	LOR	Unit		ET2401539-022	ET2401539-024	ET2401539-026	ET2401539-029	ET2401539-030
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.10**	**0.06**	**0.03**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.06**	**0.02**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.40**	**0.18**	**0.06**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.40**	**0.11**	**0.07**	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.08**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.06**	**0.06**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.02**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.02**	**0.02**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_SW130_240304	0229_SW129_240304	0229_SW128_240304	0229_SW126_240304	0229_QC102_240304
			Sampling date / time	04-Mar-2024 14:30	04-Mar-2024 14:42	04-Mar-2024 14:53	04-Mar-2024 15:07	04-Mar-2024 15:08
Compound	CAS Number	LOR	Unit	ET2401539-022	ET2401539-024	ET2401539-026	ET2401539-029	ET2401539-030
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**1.04**	**0.55**	**0.16**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.80**	**0.29**	**0.13**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.98**	**0.53**	**0.16**	<0.01	<0.01
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**79.6**	**81.4**	**89.4**	**89.2**	**85.9**
13C8-PFOA	----	0.02	%	**94.6**	**93.9**	**94.1**	**97.0**	**95.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW136_240304	0229_SW121_240304	0229_QC300_240305	0229_SW245_240307	0229_SW227_240307
				Sampling date / time	04-Mar-2024 15:46	04-Mar-2024 15:57	05-Mar-2024 18:04	07-Mar-2024 08:56	07-Mar-2024 10:18
Compound	CAS Number	LOR	Unit		ET2401539-032	ET2401539-033	ET2401539-035	ET2401539-037	ET2401539-039
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	**0.08**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.05**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.14**	**0.34**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.28**	**0.36**	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.03**	**0.08**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.02**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_SW136_240304	0229_SW121_240304	0229_QC300_240305	0229_SW245_240307	0229_SW227_240307
			Sampling date / time	04-Mar-2024 15:46	04-Mar-2024 15:57	05-Mar-2024 18:04	07-Mar-2024 08:56	07-Mar-2024 10:18
Compound	CAS Number	LOR	Unit	ET2401539-032	ET2401539-033	ET2401539-035	ET2401539-037	ET2401539-039
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**0.48**	**0.93**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.42**	**0.70**	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.48**	**0.88**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**89.8**	**88.0**	**92.2**	**100**	**95.7**
13C8-PFOA	----	0.02	%	**96.8**	**96.8**	**93.8**	**96.7**	**96.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW244_240307	0229_QC301_240307	0229_MW118_240307	0229_MW018_240307	0229_MW114_240307
				Sampling date / time	07-Mar-2024 12:55	07-Mar-2024 13:10	07-Mar-2024 13:24	07-Mar-2024 14:20	07-Mar-2024 14:36
Compound	CAS Number	LOR	Unit		ET2401539-041	ET2401539-042	ET2401539-043	ET2401539-044	ET2401539-045
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.05**	**0.48**	**3.03**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.43**	**2.84**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**0.02**	**2.68**	**17.8**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**0.20**	**0.98**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**5.97**	**3.88**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	**0.4**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	**0.12**	**0.97**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.70**	**5.83**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.10**	**0.96**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.20**	**1.47**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_SW244_240307	0229_QC301_240307	0229_MW118_240307	0229_MW018_240307	0229_MW114_240307
			Sampling date / time	07-Mar-2024 12:55	07-Mar-2024 13:10	07-Mar-2024 13:24	07-Mar-2024 14:20	07-Mar-2024 14:36
Compound	CAS Number	LOR	Unit	ET2401539-041	ET2401539-042	ET2401539-043	ET2401539-044	ET2401539-045
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	**0.07**	**10.9**	**38.2**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	**0.02**	**8.65**	**21.7**
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	**0.07**	**10.2**	**34.3**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**97.1**	**99.0**	**97.8**	**96.4**	**99.7**
13C8-PFOA	----	0.02	%	**94.4**	**95.8**	**96.5**	**96.9**	**96.6**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW135_240307	0229_MW141_240307	0229_QC104_240307	0229_MW131_240307	0229_MW072_240307
				Sampling date / time	07-Mar-2024 14:48	07-Mar-2024 15:04	07-Mar-2024 15:05	07-Mar-2024 15:12	07-Mar-2024 15:22
Compound	CAS Number	LOR	Unit		ET2401539-046	ET2401539-047	ET2401539-048	ET2401539-049	ET2401539-050
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.17**	**0.09**	**0.10**	**1.59**	**4.66**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.12**	**0.06**	**0.06**	**1.14**	**4.90**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**2.29**	**0.52**	**0.50**	**5.95**	**32.1**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.28**	**0.02**	<0.02	**0.32**	**1.72**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**12.7**	**0.28**	**0.31**	**3.69**	**42.0**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	**0.3**	**0.4**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.04**	<0.02	**0.02**	**0.52**	**1.12**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.28**	**0.10**	**0.10**	**1.89**	**6.15**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.04**	<0.02	<0.02	**0.37**	**0.76**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.14**	**0.02**	**0.02**	**0.69**	**1.52**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**1.16**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW135_240307	0229_MW141_240307	0229_QC104_240307	0229_MW131_240307	0229_MW072_240307
				Sampling date / time	07-Mar-2024 14:48	07-Mar-2024 15:04	07-Mar-2024 15:05	07-Mar-2024 15:12	07-Mar-2024 15:22
Compound	CAS Number	LOR	Unit		ET2401539-046	ET2401539-047	ET2401539-048	ET2401539-049	ET2401539-050
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**16.1**	**1.09**	**1.11**	**16.5**	**96.5**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**15.0**	**0.80**	**0.81**	**9.64**	**74.1**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**15.7**	**1.01**	**1.05**	**15.0**	**88.7**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.8**	**91.1**	**100**	**103**	**88.7**
13C8-PFOA	----	0.02	%		**98.6**	**97.3**	**96.2**	**99.0**	**97.1**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW074_240307	0229_MW106_240307	0229_MW102_240307	0229_MW101_240307	0229_MW138_240307
				Sampling date / time	07-Mar-2024 15:27	07-Mar-2024 15:35	07-Mar-2024 15:45	07-Mar-2024 15:54	07-Mar-2024 16:05
Compound	CAS Number	LOR	Unit		ET2401539-051	ET2401539-052	ET2401539-053	ET2401539-054	ET2401539-055
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**4.08**	**0.05**	<0.02	**0.02**	**0.93**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**4.50**	<0.02	<0.02	<0.02	**0.85**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**34.5**	**0.06**	**0.06**	**0.01**	**5.37**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**2.14**	<0.02	<0.02	<0.02	**0.44**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**38.3**	**0.08**	**0.10**	**0.03**	**7.51**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.4**	<0.1	<0.1	<0.1	**0.1**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.19**	<0.02	<0.02	<0.02	**0.25**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**6.51**	<0.02	<0.02	<0.02	**1.19**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.91**	<0.02	<0.02	<0.02	**0.19**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**1.94**	<0.01	<0.01	<0.01	**0.36**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**1.10**	<0.02	<0.02	<0.02	**0.04**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_MW074_240307	0229_MW106_240307	0229_MW102_240307	0229_MW101_240307	0229_MW138_240307
			Sampling date / time	07-Mar-2024 15:27	07-Mar-2024 15:35	07-Mar-2024 15:45	07-Mar-2024 15:54	07-Mar-2024 16:05
Compound	CAS Number	LOR	Unit	ET2401539-051	ET2401539-052	ET2401539-053	ET2401539-054	ET2401539-055
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	**0.08**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**95.6**	**0.19**	**0.16**	**0.06**	**17.2**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**72.8**	**0.14**	**0.16**	**0.04**	**12.9**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**87.9**	**0.19**	**0.16**	**0.06**	**15.9**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**91.3**	**90.0**	**98.7**	**94.2**	**106**
13C8-PFOA	----	0.02	%	**100**	**96.7**	**95.3**	**98.4**	**99.7**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW128_240307	0229_MW105_240307	0229_QC302_240307	0229_MW125I_240308	0229_MW125S_240308
				Sampling date / time	07-Mar-2024 16:14	07-Mar-2024 16:16	07-Mar-2024 16:25	08-Mar-2024 08:45	08-Mar-2024 08:50
Compound	CAS Number	LOR	Unit		ET2401539-056	ET2401539-057	ET2401539-058	ET2401539-059	ET2401539-060
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**31.3**	**4.98**	<0.02	**0.09**	**0.59**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**34.2**	**5.60**	<0.02	**0.04**	**0.43**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**336**	**39.8**	<0.01	**0.41**	**3.82**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**29.3**	**1.72**	<0.02	<0.02	**0.02**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**763**	**27.0**	**0.02**	**0.02**	**0.04**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		**0.56**	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**2.1**	**0.5**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**14.2**	**1.81**	<0.02	**0.02**	**0.17**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**72.1**	**10.1**	<0.02	**0.09**	**0.87**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**9.17**	**1.16**	<0.02	<0.02	**0.09**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**27.1**	**1.92**	<0.01	<0.01	**0.08**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**2.23**	**0.21**	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.35	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.35	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.35	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.35	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.87	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		**3.22**	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.87	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW128_240307	0229_MW105_240307	0229_QC302_240307	0229_MW125I_240308	0229_MW125S_240308
				Sampling date / time	07-Mar-2024 16:14	07-Mar-2024 16:16	07-Mar-2024 16:25	08-Mar-2024 08:45	08-Mar-2024 08:50
Compound	CAS Number	LOR	Unit		ET2401539-056	ET2401539-057	ET2401539-058	ET2401539-059	ET2401539-060
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.87	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.87	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.87	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.35	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.35	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.35	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.35	**0.22**	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		**1.13**	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.35	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1320**	**95.0**	**0.02**	**0.67**	**6.11**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1100**	**66.8**	**0.02**	**0.43**	**3.86**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1260**	**87.5**	**0.02**	**0.63**	**5.66**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**140**	**91.0**	**104**	**88.8**	**84.6**
13C8-PFOA	----	0.02	%		**117**	**91.0**	**101**	**96.6**	**95.0**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	0229_MW124_240308	0229_QC105_240308	0229_MW003_240308	0229_MW123I_240308	0229_MW123S_240308
				Sampling date / time	08-Mar-2024 09:04	08-Mar-2024 09:05	08-Mar-2024 09:29	08-Mar-2024 10:02	08-Mar-2024 10:16
					ET2401539-061	ET2401539-062	ET2401539-063	ET2401539-064	ET2401539-065
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	**0.24**	**0.30**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.14**	**0.20**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	**0.59**	**1.82**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.12**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.01**	**0.83**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.08**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.08**	**0.31**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.05**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.09**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	0229_MW124_240308	0229_QC105_240308	0229_MW003_240308	0229_MW123I_240308	0229_MW123S_240308
				Sampling date / time	08-Mar-2024 09:04	08-Mar-2024 09:05	08-Mar-2024 09:29	08-Mar-2024 10:02	08-Mar-2024 10:16
					ET2401539-061	ET2401539-062	ET2401539-063	ET2401539-064	ET2401539-065
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	**1.06**	**3.80**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.60**	**2.65**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	**0.92**	**3.48**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**84.8**	**83.3**	**84.3**	**88.4**	**87.2**
13C8-PFOA	----	0.02	%		**95.7**	**93.8**	**94.7**	**95.4**	**95.1**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW065_240308	0229_MW122_240308	0229_MW121_240308	0229_MW120_240308	0229_MW002_240308
				Sampling date / time	08-Mar-2024 10:23	08-Mar-2024 10:40	08-Mar-2024 10:49	08-Mar-2024 11:02	08-Mar-2024 11:14
Compound	CAS Number	LOR	Unit		ET2401539-066	ET2401539-067	ET2401539-068	ET2401539-069	ET2401539-070
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.13**	<0.02	**0.04**	**0.04**	**0.08**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.12**	<0.02	**0.04**	<0.02	**0.05**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**2.02**	<0.01	**0.26**	**0.03**	**0.89**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.19**	<0.02	<0.02	<0.02	**0.04**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**7.54**	**0.01**	**0.07**	**0.08**	**1.87**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.10**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.42**	<0.02	<0.02	<0.02	**0.08**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.09**	<0.01	<0.01	<0.01	**0.03**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.04**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW065_240308	0229_MW122_240308	0229_MW121_240308	0229_MW120_240308	0229_MW002_240308
				Sampling date / time	08-Mar-2024 10:23	08-Mar-2024 10:40	08-Mar-2024 10:49	08-Mar-2024 11:02	08-Mar-2024 11:14
Compound	CAS Number	LOR	Unit		ET2401539-066	ET2401539-067	ET2401539-068	ET2401539-069	ET2401539-070
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**10.6**	**0.01**	**0.41**	**0.15**	**3.10**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**9.56**	**0.01**	**0.33**	**0.11**	**2.76**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**10.3**	**0.01**	**0.37**	**0.15**	**2.95**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**88.1**	**92.4**	**90.3**	**94.0**	**87.2**
13C8-PFOA	----	0.02	%		**92.9**	**95.9**	**95.5**	**92.5**	**95.7**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC106_240308	0229_MW116_240308	0229_MW115_240308	0229_MW139_240308	0229_QC303_240308
				Sampling date / time	08-Mar-2024 11:15	08-Mar-2024 11:21	08-Mar-2024 11:31	08-Mar-2024 11:43	08-Mar-2024 11:46
Compound	CAS Number	LOR	Unit		ET2401539-071	ET2401539-072	ET2401539-073	ET2401539-074	ET2401539-075
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.07**	**0.22**	**0.14**	**0.06**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.05**	**0.07**	**0.08**	**0.04**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.81**	**0.21**	**0.30**	**0.53**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.04**	<0.02	<0.02	**0.02**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.81**	**0.02**	**0.12**	**1.39**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.02**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.08**	**0.05**	**0.09**	**0.03**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.03**	<0.01	<0.01	**0.02**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.04**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC106_240308	0229_MW116_240308	0229_MW115_240308	0229_MW139_240308	0229_QC303_240308
				Sampling date / time	08-Mar-2024 11:15	08-Mar-2024 11:21	08-Mar-2024 11:31	08-Mar-2024 11:43	08-Mar-2024 11:46
Compound	CAS Number	LOR	Unit		ET2401539-071	ET2401539-072	ET2401539-073	ET2401539-074	ET2401539-075
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**2.93**	**0.57**	**0.75**	**2.09**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**2.62**	**0.23**	**0.42**	**1.92**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**2.80**	**0.50**	**0.67**	**2.03**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**87.9**	**81.2**	**87.1**	**84.3**	**92.2**
13C8-PFOA	----	0.02	%		**93.6**	**95.6**	**92.0**	**94.4**	**92.7**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW119_240308	0229_QC501_240308	----	----	----
				Sampling date / time	08-Mar-2024 12:00	08-Mar-2024 17:00	----	----	----
Compound	CAS Number	LOR	Unit		ET2401539-076	ET2401539-079	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.34**	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.05**	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.04**	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.16**	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.13**	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.14**	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.14**	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW119_240308	0229_QC501_240308	----	----	----
				Sampling date / time	08-Mar-2024 12:00	08-Mar-2024 17:00	----	----	----
Compound	CAS Number	LOR	Unit		ET2401539-076	ET2401539-079	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1.00**	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.09**	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.00**	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**85.5**	**84.7**	----	----	----
13C8-PFOA	----	0.02	%		**94.6**	**93.1**	----	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: SURFACE WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231S: PFAS Surrogate
(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(SOIL) EP231C: Perfluoroalkyl Sulfonamides
(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids
(SOIL) EP231P: PFAS Sums
(SOIL) EP231S: PFAS Surrogate
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ET2401539**	Page	: 1 of 13
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 12-Mar-2024
Site	: QLD_0229	Issue Date	: 21-Mar-2024
Sampler	: [redacted]	No. of samples received	: 79
Order number	: 60612487_3.1	No. of samples analysed	: 79

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	ET2401539--003	0229_SD109_240304	**Perfluoropentane sulfonic acid (PFPeS)**	2706-91-4	59.1 %	73.0-123%	**Recovery less than lower data quality objective**
EP231A: Perfluoroalkyl Sulfonic Acids	ET2401539--003	0229_SD109_240304	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	ET2401539--003	0229_SD109_240304	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	ET2401539--003	0229_SD109_240304	**Perfluorononanoic acid (PFNA)**	375-95-1	70.2 %	72.0-129%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	ET2401539--003	0229_SD109_240304	**Perfluorooctane sulfonamide (FOSA)**	754-91-6	47.3 %	67.0-137%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	ET2401539--003	0229_SD109_240304	**N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)**	2991-50-6	59.4 %	61.0-139%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	ET2401539--003	0229_SD109_240304	**8:2 Fluorotelomer sulfonic acid (8:2 FTS)**	39108-34-4	62.9 %	65.0-137%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	ET2401539--003	0229_SD109_240304	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	68.6 %	70.0-130%	**Recovery less than lower data quality objective**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	ET2401539--066	0229_MW065_240308	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	ET2401539--066	0229_MW065_240308	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	ET2401539--073	0229_MW115_240308	**Perfluorobutanoic acid (PFBA)**	375-22-4	64.2 %	73.0-129%	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP) - Continued						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	5	68	7.35	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)								
HDPE Soil Jar (EA055)								
0229_SD144_240304,	0229_SD109_240304,	**04-Mar-2024**	**----**	----	----	**15-Mar-2024**	18-Mar-2024	✓
0229_SD110_240304,	0229_SD139_240304,							
0229_SD113_240304,	0229_QC101_240304,							
0229_SD119_240304,	0229_SD120_240304,							
0229_SD140_240304,	0229_SD132_240304,							
0229_SD130_240304,	0229_SD128_240304,							
0229_SD126_240304,	0229_QC103_240304,							
0229_SD136_240304,	0229_SD121_240304,							
0229_SD134_240304								
HDPE Soil Jar (EA055)								
0229_SD245_240307,	0229_SD227_240307,	**07-Mar-2024**	**----**	----	----	**15-Mar-2024**	21-Mar-2024	✓
0229_SD244_240307								
HDPE Soil Jar (EA055)								
0229_SD129_240304		**08-Mar-2024**	**----**	----	----	**15-Mar-2024**	22-Mar-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0229_SD134_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**18-Mar-2024**	23-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD144_240304, 0229_SD109_240304, 0229_SD110_240304, 0229_SD139_240304, 0229_SD113_240304, 0229_QC101_240304, 0229_SD119_240304, 0229_SD120_240304, 0229_SD140_240304, 0229_SD132_240304, 0229_SD130_240304, 0229_SD128_240304, 0229_SD126_240304, 0229_QC103_240304, 0229_SD136_240304, 0229_SD121_240304	**04-Mar-2024**	**19-Mar-2024**	31-Aug-2024	✓	**20-Mar-2024**	28-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD245_240307, 0229_SD227_240307, 0229_SD244_240307	**07-Mar-2024**	**19-Mar-2024**	03-Sep-2024	✓	**20-Mar-2024**	28-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD129_240304	**08-Mar-2024**	**19-Mar-2024**	04-Sep-2024	✓	**20-Mar-2024**	28-Apr-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0229_SD134_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**18-Mar-2024**	23-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD144_240304, 0229_SD109_240304, 0229_SD110_240304, 0229_SD139_240304, 0229_SD113_240304, 0229_QC101_240304, 0229_SD119_240304, 0229_SD120_240304, 0229_SD140_240304, 0229_SD132_240304, 0229_SD130_240304, 0229_SD128_240304, 0229_SD126_240304, 0229_QC103_240304, 0229_SD136_240304, 0229_SD121_240304	**04-Mar-2024**	**19-Mar-2024**	31-Aug-2024	✓	**20-Mar-2024**	28-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD245_240307, 0229_SD227_240307, 0229_SD244_240307	**07-Mar-2024**	**19-Mar-2024**	03-Sep-2024	✓	**20-Mar-2024**	28-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD129_240304	**08-Mar-2024**	**19-Mar-2024**	04-Sep-2024	✓	**20-Mar-2024**	28-Apr-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0229_SD134_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**18-Mar-2024**	23-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD144_240304, 0229_SD109_240304, 0229_SD110_240304, 0229_SD139_240304, 0229_SD113_240304, 0229_QC101_240304, 0229_SD119_240304, 0229_SD120_240304, 0229_SD140_240304, 0229_SD132_240304, 0229_SD130_240304, 0229_SD128_240304, 0229_SD126_240304, 0229_QC103_240304, 0229_SD136_240304, 0229_SD121_240304	**04-Mar-2024**	**19-Mar-2024**	31-Aug-2024	✓	**20-Mar-2024**	28-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD245_240307, 0229_SD227_240307, 0229_SD244_240307	**07-Mar-2024**	**19-Mar-2024**	03-Sep-2024	✓	**20-Mar-2024**	28-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD129_240304	**08-Mar-2024**	**19-Mar-2024**	04-Sep-2024	✓	**20-Mar-2024**	28-Apr-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0229_SD134_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**18-Mar-2024**	23-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD144_240304, 0229_SD109_240304, 0229_SD110_240304, 0229_SD139_240304, 0229_SD113_240304, 0229_QC101_240304, 0229_SD119_240304, 0229_SD120_240304, 0229_SD140_240304, 0229_SD132_240304, 0229_SD130_240304, 0229_SD128_240304, 0229_SD126_240304, 0229_QC103_240304, 0229_SD136_240304, 0229_SD121_240304	**04-Mar-2024**	**19-Mar-2024**	31-Aug-2024	✓	**20-Mar-2024**	28-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD245_240307, 0229_SD227_240307, 0229_SD244_240307	**07-Mar-2024**	**19-Mar-2024**	03-Sep-2024	✓	**20-Mar-2024**	28-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD129_240304	**08-Mar-2024**	**19-Mar-2024**	04-Sep-2024	✓	**20-Mar-2024**	28-Apr-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0229_SD134_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**18-Mar-2024**	23-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD144_240304, 0229_SD109_240304, 0229_SD110_240304, 0229_SD139_240304, 0229_SD113_240304, 0229_QC101_240304, 0229_SD119_240304, 0229_SD120_240304, 0229_SD140_240304, 0229_SD132_240304, 0229_SD130_240304, 0229_SD128_240304, 0229_SD126_240304, 0229_QC103_240304, 0229_SD136_240304, 0229_SD121_240304	**04-Mar-2024**	**19-Mar-2024**	31-Aug-2024	✓	**20-Mar-2024**	28-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD245_240307, 0229_SD227_240307, 0229_SD244_240307	**07-Mar-2024**	**19-Mar-2024**	03-Sep-2024	✓	**20-Mar-2024**	28-Apr-2024	✓
HDPE Soil Jar (EP231X) 0229_SD129_240304	**08-Mar-2024**	**19-Mar-2024**	04-Sep-2024	✓	**20-Mar-2024**	28-Apr-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0229_SW144_240304, 0229_SW109_240304, 0229_SW110_240304, 0229_SW139_240304, 0229_SW113_240304, 0229_QC100_240304, 0229_SW119_240304, 0229_SW120_240304, 0229_SW140_240304, 0229_SW134_240304, 0229_SW132_240304, 0229_SW130_240304, 0229_SW129_240304, 0229_SW128_240304, 0229_SW126_240304, 0229_QC102_240304, 0229_SW136_240304, 0229_SW121_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**15-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X)							
0229_QC300_240305	**05-Mar-2024**	**14-Mar-2024**	01-Sep-2024	✓	**15-Mar-2024**	01-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_SW245_240307, 0229_SW227_240307, 0229_SW244_240307, 0229_QC301_240307, 0229_MW118_240307, 0229_MW018_240307, 0229_MW114_240307, 0229_MW135_240307, 0229_MW141_240307, 0229_QC104_240307, 0229_MW131_240307, 0229_MW072_240307, 0229_MW074_240307, 0229_MW106_240307, 0229_MW102_240307, 0229_MW101_240307, 0229_MW138_240307, 0229_MW128_240307, 0229_MW105_240307, 0229_QC302_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**19-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_MW120_240308, 0229_MW115_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_MW125I_240308, 0229_MW125S_240308, 0229_MW124_240308, 0229_QC105_240308, 0229_MW003_240308, 0229_MW123I_240308, 0229_MW123S_240308, 0229_MW065_240308, 0229_MW122_240308, 0229_MW121_240308, 0229_MW002_240308, 0229_QC106_240308, 0229_MW116_240308, 0229_MW139_240308, 0229_QC303_240308, 0229_MW119_240308, 0229_QC501_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**19-Mar-2024**	04-Sep-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0229_SW144_240304, 0229_SW109_240304, 0229_SW110_240304, 0229_SW139_240304, 0229_SW113_240304, 0229_QC100_240304, 0229_SW119_240304, 0229_SW120_240304, 0229_SW140_240304, 0229_SW134_240304, 0229_SW132_240304, 0229_SW130_240304, 0229_SW129_240304, 0229_SW128_240304, 0229_SW126_240304, 0229_QC102_240304, 0229_SW136_240304, 0229_SW121_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**15-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X)							
0229_QC300_240305	**05-Mar-2024**	**14-Mar-2024**	01-Sep-2024	✓	**15-Mar-2024**	01-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_SW245_240307, 0229_SW227_240307, 0229_SW244_240307, 0229_QC301_240307, 0229_MW118_240307, 0229_MW018_240307, 0229_MW114_240307, 0229_MW135_240307, 0229_MW141_240307, 0229_QC104_240307, 0229_MW131_240307, 0229_MW072_240307, 0229_MW074_240307, 0229_MW106_240307, 0229_MW102_240307, 0229_MW101_240307, 0229_MW138_240307, 0229_MW128_240307, 0229_MW105_240307, 0229_QC302_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**19-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_MW120_240308, 0229_MW115_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_MW125I_240308, 0229_MW125S_240308, 0229_MW124_240308, 0229_QC105_240308, 0229_MW003_240308, 0229_MW123I_240308, 0229_MW123S_240308, 0229_MW065_240308, 0229_MW122_240308, 0229_MW121_240308, 0229_MW002_240308, 0229_QC106_240308, 0229_MW116_240308, 0229_MW139_240308, 0229_QC303_240308, 0229_MW119_240308, 0229_QC501_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**19-Mar-2024**	04-Sep-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0229_SW144_240304, 0229_SW109_240304, 0229_SW110_240304, 0229_SW139_240304, 0229_SW113_240304, 0229_QC100_240304, 0229_SW119_240304, 0229_SW120_240304, 0229_SW140_240304, 0229_SW134_240304, 0229_SW132_240304, 0229_SW130_240304, 0229_SW129_240304, 0229_SW128_240304, 0229_SW126_240304, 0229_QC102_240304, 0229_SW136_240304, 0229_SW121_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**15-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X)							
0229_QC300_240305	**05-Mar-2024**	**14-Mar-2024**	01-Sep-2024	✓	**15-Mar-2024**	01-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_SW245_240307, 0229_SW227_240307, 0229_SW244_240307, 0229_QC301_240307, 0229_MW118_240307, 0229_MW018_240307, 0229_MW114_240307, 0229_MW135_240307, 0229_MW141_240307, 0229_QC104_240307, 0229_MW131_240307, 0229_MW072_240307, 0229_MW074_240307, 0229_MW106_240307, 0229_MW102_240307, 0229_MW101_240307, 0229_MW138_240307, 0229_MW128_240307, 0229_MW105_240307, 0229_QC302_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**19-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_MW120_240308, 0229_MW115_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_MW125I_240308, 0229_MW125S_240308, 0229_MW124_240308, 0229_QC105_240308, 0229_MW003_240308, 0229_MW123I_240308, 0229_MW123S_240308, 0229_MW065_240308, 0229_MW122_240308, 0229_MW121_240308, 0229_MW002_240308, 0229_QC106_240308, 0229_MW116_240308, 0229_MW139_240308, 0229_QC303_240308, 0229_MW119_240308, 0229_QC501_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**19-Mar-2024**	04-Sep-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0229_SW144_240304, 0229_SW109_240304, 0229_SW110_240304, 0229_SW139_240304, 0229_SW113_240304, 0229_QC100_240304, 0229_SW119_240304, 0229_SW120_240304, 0229_SW140_240304, 0229_SW134_240304, 0229_SW132_240304, 0229_SW130_240304, 0229_SW129_240304, 0229_SW128_240304, 0229_SW126_240304, 0229_QC102_240304, 0229_SW136_240304, 0229_SW121_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**15-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X)							
0229_QC300_240305	**05-Mar-2024**	**14-Mar-2024**	01-Sep-2024	✓	**15-Mar-2024**	01-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_SW245_240307, 0229_SW227_240307, 0229_SW244_240307, 0229_QC301_240307, 0229_MW118_240307, 0229_MW018_240307, 0229_MW114_240307, 0229_MW135_240307, 0229_MW141_240307, 0229_QC104_240307, 0229_MW131_240307, 0229_MW072_240307, 0229_MW074_240307, 0229_MW106_240307, 0229_MW102_240307, 0229_MW101_240307, 0229_MW138_240307, 0229_MW128_240307, 0229_MW105_240307, 0229_QC302_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**19-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_MW120_240308, 0229_MW115_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_MW125I_240308, 0229_MW125S_240308, 0229_MW124_240308, 0229_QC105_240308, 0229_MW003_240308, 0229_MW123I_240308, 0229_MW123S_240308, 0229_MW065_240308, 0229_MW122_240308, 0229_MW121_240308, 0229_MW002_240308, 0229_QC106_240308, 0229_MW116_240308, 0229_MW139_240308, 0229_QC303_240308, 0229_MW119_240308, 0229_QC501_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**19-Mar-2024**	04-Sep-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0229_SW144_240304, 0229_SW109_240304, 0229_SW110_240304, 0229_SW139_240304, 0229_SW113_240304, 0229_QC100_240304, 0229_SW119_240304, 0229_SW120_240304, 0229_SW140_240304, 0229_SW134_240304, 0229_SW132_240304, 0229_SW130_240304, 0229_SW129_240304, 0229_SW128_240304, 0229_SW126_240304, 0229_QC102_240304, 0229_SW136_240304, 0229_SW121_240304	**04-Mar-2024**	**14-Mar-2024**	31-Aug-2024	✓	**15-Mar-2024**	31-Aug-2024	✓
HDPE (no PTFE) (EP231X)							
0229_QC300_240305	**05-Mar-2024**	**14-Mar-2024**	01-Sep-2024	✓	**15-Mar-2024**	01-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_SW245_240307, 0229_SW227_240307, 0229_SW244_240307, 0229_QC301_240307, 0229_MW118_240307, 0229_MW018_240307, 0229_MW114_240307, 0229_MW135_240307, 0229_MW141_240307, 0229_QC104_240307, 0229_MW131_240307, 0229_MW072_240307, 0229_MW074_240307, 0229_MW106_240307, 0229_MW102_240307, 0229_MW101_240307, 0229_MW138_240307, 0229_MW128_240307, 0229_MW105_240307, 0229_QC302_240307	**07-Mar-2024**	**15-Mar-2024**	03-Sep-2024	✓	**19-Mar-2024**	03-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_MW120_240308, 0229_MW115_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**18-Mar-2024**	04-Sep-2024	✓
HDPE (no PTFE) (EP231X)							
0229_MW125I_240308, 0229_MW125S_240308, 0229_MW124_240308, 0229_QC105_240308, 0229_MW003_240308, 0229_MW123I_240308, 0229_MW123S_240308, 0229_MW065_240308, 0229_MW122_240308, 0229_MW121_240308, 0229_MW002_240308, 0229_QC106_240308, 0229_MW116_240308, 0229_MW139_240308, 0229_QC303_240308, 0229_MW119_240308, 0229_QC501_240308	**08-Mar-2024**	**15-Mar-2024**	04-Sep-2024	✓	**19-Mar-2024**	04-Sep-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	3	21	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	33	**12.12**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	33	**6.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	33	**6.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	33	**6.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	5	68	**7.35**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	68	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	68	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	68	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

QUALITY CONTROL REPORT

Work Order	: **ET2401539**	Page	: 1 of 27
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 12-Mar-2024
Order number	: 60612487_3.1	Date Analysis Commenced	: 14-Mar-2024
C-O-C number	: 64506	Issue Date	: 21-Mar-2024
Sampler	: [redacted]		
Site	: QLD_0229		
Quote number	: EB23AECOMAU0017		
No. of samples received	: 79		
No. of samples analysed	: 79		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
[redacted]	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
[redacted]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5664108)									
ET2401539-001	0229_SD144_240304	EA055: Moisture Content	----	0.1	%	32.2	37.1	14.3	0% - 20%
ET2401539-023	0229_SD130_240304	EA055: Moisture Content	----	0.1	%	35.0	34.6	1.3	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5664109)									
ET2401539-078	0229_SD134_240304	EA055: Moisture Content	----	0.1	%	23.1	23.7	2.8	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662822)									
ET2401536-003	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
ET2401538-017	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0010	0.0011	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5670466)									
ET2401539-001	0229_SD144_240304	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0005	0.0004	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0023	0.0021	8.7	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5670466) - continued									
ET2401539-001	0229_SD144_240304	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0393	0.0378	4.0	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
ET2401539-023	0229_SD130_240304	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0006	0.0007	15.8	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0047	0.0054	13.3	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662822)									
ET2401536-003	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ET2401538-017	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5670466)									
ET2401539-001	0229_SD144_240304	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5670466) - continued									
ET2401539-001	0229_SD144_240304	EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ET2401539-023	0229_SD130_240304	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0003	0.0004	30.3	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662822)									
ET2401536-003	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2401538-017	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662822) - continued									
ET2401538-017	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5670466)									
ET2401539-001	0229_SD144_240304	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2401539-023	0229_SD130_240304	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662822)									
ET2401536-003	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662822) - continued									
ET2401536-003	Anonymous	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2401538-017	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5670466)									
ET2401539-001	0229_SD144_240304	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2401539-023	0229_SD130_240304	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5662822)									
ET2401536-003	Anonymous	EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
ET2401538-017	Anonymous	EP231X: Sum of PFAS	----	0.0002	mg/kg	0.0010	0.0011	9.5	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0010	0.0011	9.5	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0010	0.0011	9.5	No Limit
EP231P: PFAS Sums (QC Lot: 5670466)									
ET2401539-001	0229_SD144_240304	EP231X: Sum of PFAS	----	0.0002	mg/kg	0.0436	0.0414	5.2	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0416	0.0399	4.2	0% - 20%

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231P: PFAS Sums (QC Lot: 5670466) - continued									
ET2401539-001	0229_SD144_240304	EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0430	0.0409	5.0	0% - 20%
ET2401539-023	0229_SD130_240304	EP231X: Sum of PFAS	----	0.0002	mg/kg	0.0056	0.0067	17.9	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0053	0.0061	14.0	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0053	0.0061	14.0	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662648)									
ET2401539-014	0229_SW119_240304	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.41	0.43	5.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.42	0.45	8.3	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.12	0.12	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.07	0.07	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ET2401539-021	0229_SW132_240304	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.13	0.13	0.0	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.23	0.25	10.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662681)									
ET2401539-049	0229_MW131_240307	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	5.95	5.82	2.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	3.69	3.44	6.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	1.59	1.46	9.0	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	1.14	1.14	0.0	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.32	0.30	5.2	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662694)									
ET2401539-059	0229_MW125I_240308	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.41	0.43	3.4	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.09	0.09	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662700)									
ET2401539-069	0229_MW120_240308	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.03	0.04	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.08	0.08	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5662700) - continued									
ET2401539-069	0229_MW120_240308	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662648)									
ET2401539-014	0229_SW119_240304	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.03	0.04	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.13	0.13	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ET2401539-021	0229_SW132_240304	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662681)									
ET2401539-049	0229_MW131_240307	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.69	0.64	8.7	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.52	0.48	8.7	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.89	1.77	6.4	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.37	0.35	5.1	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662681) - continued									
ET2401539-049	0229_MW131_240307	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.3	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662694)									
ET2401539-059	0229_MW125I_240308	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.09	0.09	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5662700)									
ET2401539-069	0229_MW120_240308	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662648)									
ET2401539-014	0229_SW119_240304	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662648) - continued									
ET2401539-014	0229_SW119_240304	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ET2401539-021	0229_SW132_240304	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662681)									
ET2401539-049	0229_MW131_240307	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662694)									
ET2401539-059	0229_MW125I_240308	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662694) - continued									
ET2401539-059	0229_MW125I_240308	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5662700)									
ET2401539-069	0229_MW120_240308	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662648)									
ET2401539-014	0229_SW119_240304	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ET2401539-021	0229_SW132_240304	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662681)									
ET2401539-049	0229_MW131_240307	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662681) - continued									
ET2401539-049	0229_MW131_240307	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662694)									
ET2401539-059	0229_MW125I_240308	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5662700)									
ET2401539-069	0229_MW120_240308	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5662648)									
ET2401539-014	0229_SW119_240304	EP231X: Sum of PFAS	----	0.01	µg/L	1.25	1.31	4.7	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.83	0.88	5.8	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	1.16	1.22	5.0	0% - 20%
ET2401539-021	0229_SW132_240304	EP231X: Sum of PFAS	----	0.01	µg/L	0.42	0.44	4.7	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.36	0.38	5.4	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.42	0.44	4.7	0% - 20%
EP231P: PFAS Sums (QC Lot: 5662681)									
ET2401539-049	0229_MW131_240307	EP231X: Sum of PFAS	----	0.01	µg/L	16.5	15.7	4.7	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	9.64	9.26	4.0	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	15.0	14.3	5.1	0% - 20%
EP231P: PFAS Sums (QC Lot: 5662694)									
ET2401539-059	0229_MW125I_240308	EP231X: Sum of PFAS	----	0.01	µg/L	0.67	0.69	2.9	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.43	0.45	4.5	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.63	0.65	3.1	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231P: PFAS Sums (QC Lot: 5662700)									
ET2401539-069	0229_MW120_240308	EP231X: Sum of PFAS	----	0.01	µg/L	0.15	0.16	6.5	0% - 50%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.11	0.12	8.7	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.15	0.16	6.5	0% - 50%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662822)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00111 mg/kg	102	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	88.9	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00114 mg/kg	86.8	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	95.1	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	98.2	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00121 mg/kg	88.3	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5670466)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00111 mg/kg	96.7	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	99.3	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00114 mg/kg	96.8	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	99.4	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	86.8	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00121 mg/kg	85.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662822)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	90.9	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.3	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.0	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.7	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.8	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.0	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5670466)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	99.4	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.2	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	71.0	131

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5670466) - continued								
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.3	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.2	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.0	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.0	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	99.7	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662822)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	120	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.7	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.6	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	106	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5670466)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	104	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.7	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	87.6	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.6	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.8	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.3	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662822)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	96.8	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00119 mg/kg	98.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	101	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00121 mg/kg	96.0	70.0	130

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5670466)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	104	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00119 mg/kg	116	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	110	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00121 mg/kg	93.2	70.0	130
EP231P: PFAS Sums (QCLot: 5662822)								
EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231P: PFAS Sums (QCLot: 5670466)								
EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662648)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	91.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	98.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	98.7	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	96.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	81.0	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	87.6	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662681)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	85.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	83.7	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	79.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	93.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	83.7	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	87.1	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662694)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	99.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	86.6	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	82.9	68.0	131

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662694) - continued								
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	94.1	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	90.7	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	87.4	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662700)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	84.2	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	89.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.4	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	90.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	91.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662648)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	95.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	95.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	91.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	95.5	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	90.7	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	97.3	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	86.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.5	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	93.0	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	78.1	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	99.8	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662681)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	89.8	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	84.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	83.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	87.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	85.5	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	85.3	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	84.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	89.9	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	92.2	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	90.9	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	92.1	71.0	132

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662694)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	90.2	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	87.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	79.7	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	90.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	91.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	87.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.7	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	93.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	88.7	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	89.5	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	96.7	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662700)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	90.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	86.3	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	86.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	90.7	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	85.3	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	92.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	92.3	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	89.2	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	98.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662648)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	89.3	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	98.9	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	96.6	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	80.2	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	88.4	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	83.4	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	92.2	61.0	135

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662681)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	86.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	94.8	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	84.1	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	85.0	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	96.6	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	86.6	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662694)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	86.5	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	114	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	100	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	82.2	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	95.3	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	95.3	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	93.4	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662700)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	88.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	100	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	81.8	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.3	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	95.3	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	83.6	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662648)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	101	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	104	64.0	140

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662648) - continued								
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	94.9	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	77.5	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662681)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	89.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	93.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	92.1	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	76.3	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662694)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	95.2	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	95.3	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	97.2	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	76.9	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662700)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	94.4	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	95.1	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	96.5	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.7	70.0	130
EP231P: PFAS Sums (QCLot: 5662648)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5662681)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5662694)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5662700)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 5662700) - continued								
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662822)							
ET2401538-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00111 mg/kg	116	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00118 mg/kg	78.9	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00114 mg/kg	85.5	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	100	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	89.5	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00121 mg/kg	76.8	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5670466)							
ET2401539-003	0229_SD109_240304	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00111 mg/kg	85.6	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00118 mg/kg	# 59.1	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00114 mg/kg	# Not Determined	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	71.8	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00121 mg/kg	64.1	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662822)							
ET2401538-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	93.9	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	94.2	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	93.7	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	100	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	97.1	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	109	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	85.5	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	97.2	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	91.6	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	88.9	66.0	139

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662822) - continued							
ET2401538-001	Anonymous	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	132	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5670466)							
ET2401539-003	0229_SD109_240304	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	74.7	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	94.1	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	81.0	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	73.1	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	78.2	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	# 70.2	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	82.0	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	81.0	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	81.6	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	82.5	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	84.9	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662822)							
ET2401538-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	93.9	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	107	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	86.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	71.1	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	99.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	80.8	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	75.3	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5670466)							
ET2401539-003	0229_SD109_240304	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	# 47.3	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	77.3	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	71.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	83.1	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	72.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	66.6	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	# 59.4	61.0	139

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662822)							
ET2401538-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	106	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00119 mg/kg	102	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	101	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00121 mg/kg	71.2	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5670466)							
ET2401539-003	0229_SD109_240304	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	77.1	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00119 mg/kg	80.2	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	# 62.9	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00121 mg/kg	# 68.6	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662648)							
ET2401539-032	0229_SW136_240304	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	105	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	88.6	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	87.2	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	93.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	136	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	79.4	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662681)							
ET2401539-054	0229_MW101_240307	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	112	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	93.6	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	85.3	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	105	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	90.7	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	105	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662694)							
ET2401539-066	0229_MW065_240308	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	107	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	87.2	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	89.1	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	# Not Determined	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	87.7	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662700)							
ET2401539-073	0229_MW115_240308	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	115	72.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5662700) - continued							
ET2401539-073	0229_MW115_240308	EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	81.5	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	85.4	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	90.5	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	90.2	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	86.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662648)							
ET2401539-032	0229_SW136_240304	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	91.1	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	75.8	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	79.5	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	93.9	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	91.4	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	89.0	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	96.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	110	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	98.6	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	108	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	95.3	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662681)							
ET2401539-054	0229_MW101_240307	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	76.5	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	80.2	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	82.4	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	89.3	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	88.3	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	87.9	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	90.5	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	102	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	96.7	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	85.1	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	89.7	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662694)							
ET2401539-066	0229_MW065_240308	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	73.5	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	81.7	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	78.0	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	86.9	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	81.0	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	88.9	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	82.4	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	90.3	69.0	133

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662694) - continued							
ET2401539-066	0229_MW065_240308	EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	83.4	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	75.9	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	79.6	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5662700)							
ET2401539-073	0229_MW115_240308	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	# 64.2	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	87.8	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	81.6	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	84.6	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.5	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	85.3	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	83.7	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	90.2	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	85.9	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	90.1	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	86.6	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662648)							
ET2401539-032	0229_SW136_240304	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	93.9	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	115	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	92.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	104	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	99.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	110	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	93.5	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662681)							
ET2401539-054	0229_MW101_240307	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	97.8	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	105	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	93.1	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	92.7	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	94.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	106	65.0	136

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662681) - continued							
ET2401539-054	0229_MW101_240307	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	97.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662694)							
ET2401539-066	0229_MW065_240308	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	81.7	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	90.4	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	91.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	76.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	86.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	85.2	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	76.3	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5662700)							
ET2401539-073	0229_MW115_240308	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	92.1	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	94.4	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	87.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	76.6	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	91.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	89.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	82.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662648)							
ET2401539-032	0229_SW136_240304	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	96.6	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	98.2	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	98.5	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	81.0	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662681)							
ET2401539-054	0229_MW101_240307	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	94.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	101	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	95.4	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	74.6	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662694)							
ET2401539-066	0229_MW065_240308	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	95.6	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	97.1	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	96.8	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	74.3	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5662700)							
ET2401539-073	0229_MW115_240308	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	85.0	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	98.7	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	99.0	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	70.7	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ET2401539**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: +61 7 3552 8616
Facsimile	: ----	Facsimile	:
Project	: QLD_0229_PFASOMP_24	Page	: 1 of 6
Order number	: 60612487_3.1	Quote number	: EB2023AECOMAU0017 (EB23AECOMAU0017)
C-O-C number	: 64506	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: QLD_0229		
Sampler	: [redacted]		

Dates

Date Samples Received	: 12-Mar-2024 07:45	Issue Date	: 13-Mar-2024
Client Requested Due Date	: 21-Mar-2024	Scheduled Reporting Date	: **21-Mar-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 2	Temperature	: 7.0°C, 4.1°C, 5.9°C - Ice present
Receipt Detail	: Medium Esky	No. of samples received / analysed	: 79 / 79

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***Samples were originally received by Townsville, and forwarded to ALS Brisbane for analysis.**
- **The laboratory acknowledges your requested reporting date, however due to the analytical request and associated procedures involved the requested due date will not be possible. Please note the best practical due date has been assigned.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- All remaining analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
ET2401539-001	04-Mar-2024 11:21	0229_SD144_240304	✓	✓
ET2401539-003	04-Mar-2024 11:40	0229_SD109_240304	✓	✓
ET2401539-005	04-Mar-2024 11:41	0229_SD110_240304	✓	✓
ET2401539-007	04-Mar-2024 12:10	0229_SD139_240304	✓	✓
ET2401539-010	04-Mar-2024 12:33	0229_SD113_240304	✓	✓
ET2401539-012	04-Mar-2024 12:35	0229_QC101_240304	✓	✓
ET2401539-013	04-Mar-2024 12:55	0229_SD119_240304	✓	✓
ET2401539-016	04-Mar-2024 13:12	0229_SD120_240304	✓	✓
ET2401539-017	04-Mar-2024 13:27	0229_SD140_240304	✓	✓
ET2401539-020	04-Mar-2024 14:16	0229_SD132_240304	✓	✓
ET2401539-023	04-Mar-2024 14:30	0229_SD130_240304	✓	✓
ET2401539-025	04-Mar-2024 14:53	0229_SD128_240304	✓	✓
ET2401539-027	04-Mar-2024 15:06	0229_SD126_240304	✓	✓
ET2401539-028	04-Mar-2024 15:07	0229_QC103_240304	✓	✓
ET2401539-031	04-Mar-2024 15:45	0229_SD136_240304	✓	✓
ET2401539-034	04-Mar-2024 15:57	0229_SD121_240304	✓	✓
ET2401539-036	07-Mar-2024 08:55	0229_SD245_240307	✓	✓
ET2401539-038	07-Mar-2024 10:17	0229_SD227_240307	✓	✓
ET2401539-040	07-Mar-2024 12:53	0229_SD244_240307	✓	✓
ET2401539-077	08-Mar-2024 10:07	0229_SD129_240304	✓	✓
ET2401539-078	04-Mar-2024 12:08	0229_SD134_240304	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
ET2401539-002	04-Mar-2024 11:21	0229_SW144_240304	✓
ET2401539-004	04-Mar-2024 11:41	0229_SW109_240304	✓
ET2401539-006	04-Mar-2024 11:43	0229_SW110_240304	✓
ET2401539-008	04-Mar-2024 12:10	0229_SW139_240304	✓
ET2401539-009	04-Mar-2024 12:33	0229_SW113_240304	✓
ET2401539-011	04-Mar-2024 12:34	0229_QC100_240304	✓
ET2401539-014	04-Mar-2024 12:55	0229_SW119_240304	✓
ET2401539-015	04-Mar-2024 13:11	0229_SW120_240304	✓
ET2401539-018	04-Mar-2024 13:28	0229_SW140_240304	✓
ET2401539-019	04-Mar-2024 14:02	0229_SW134_240304	✓
ET2401539-021	04-Mar-2024 14:16	0229_SW132_240304	✓
ET2401539-022	04-Mar-2024 14:30	0229_SW130_240304	✓
ET2401539-024	04-Mar-2024 14:42	0229_SW129_240304	✓
ET2401539-026	04-Mar-2024 14:53	0229_SW128_240304	✓
ET2401539-029	04-Mar-2024 15:07	0229_SW126_240304	✓
ET2401539-030	04-Mar-2024 15:08	0229_QC102_240304	✓
ET2401539-032	04-Mar-2024 15:46	0229_SW136_240304	✓
ET2401539-033	04-Mar-2024 15:57	0229_SW121_240304	✓
ET2401539-035	05-Mar-2024 18:04	0229_QC300_240305	✓
ET2401539-037	07-Mar-2024 08:56	0229_SW245_240307	✓
ET2401539-039	07-Mar-2024 10:18	0229_SW227_240307	✓
ET2401539-041	07-Mar-2024 12:55	0229_SW244_240307	✓
ET2401539-042	07-Mar-2024 13:10	0229_QC301_240307	✓
ET2401539-043	07-Mar-2024 13:24	0229_MW118_240307	✓
ET2401539-044	07-Mar-2024 14:20	0229_MW018_240307	✓
ET2401539-045	07-Mar-2024 14:36	0229_MW114_240307	✓
ET2401539-046	07-Mar-2024 14:48	0229_MW135_240307	✓
ET2401539-047	07-Mar-2024 15:04	0229_MW141_240307	✓
ET2401539-048	07-Mar-2024 15:05	0229_QC104_240307	✓
ET2401539-049	07-Mar-2024 15:12	0229_MW131_240307	✓
ET2401539-050	07-Mar-2024 15:22	0229_MW072_240307	✓
ET2401539-051	07-Mar-2024 15:27	0229_MW074_240307	✓
ET2401539-052	07-Mar-2024 15:35	0229_MW106_240307	✓
ET2401539-053	07-Mar-2024 15:45	0229_MW102_240307	✓
ET2401539-054	07-Mar-2024 15:54	0229_MW101_240307	✓
ET2401539-055	07-Mar-2024 16:05	0229_MW138_240307	✓
ET2401539-056	07-Mar-2024 16:14	0229_MW128_240307	✓
ET2401539-057	07-Mar-2024 16:16	0229_MW105_240307	✓
ET2401539-058	07-Mar-2024 16:25	0229_QC302_240307	✓
ET2401539-059	08-Mar-2024 08:45	0229_MW125I_240308	✓
ET2401539-060	08-Mar-2024 08:50	0229_MW125S_240308	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
ET2401539-061	08-Mar-2024 09:04	0229_MW124_240308	✓
ET2401539-062	08-Mar-2024 09:05	0229_QC105_240308	✓
ET2401539-063	08-Mar-2024 09:29	0229_MW003_240308	✓
ET2401539-064	08-Mar-2024 10:02	0229_MW123I_240308	✓
ET2401539-065	08-Mar-2024 10:16	0229_MW123S_240308	✓
ET2401539-066	08-Mar-2024 10:23	0229_MW065_240308	✓
ET2401539-067	08-Mar-2024 10:40	0229_MW122_240308	✓
ET2401539-068	08-Mar-2024 10:49	0229_MW121_240308	✓
ET2401539-069	08-Mar-2024 11:02	0229_MW120_240308	✓
ET2401539-070	08-Mar-2024 11:14	0229_MW002_240308	✓
ET2401539-071	08-Mar-2024 11:15	0229_QC106_240308	✓
ET2401539-072	08-Mar-2024 11:21	0229_MW116_240308	✓
ET2401539-073	08-Mar-2024 11:31	0229_MW115_240308	✓
ET2401539-074	08-Mar-2024 11:43	0229_MW139_240308	✓
ET2401539-075	08-Mar-2024 11:46	0229_QC303_240308	✓
ET2401539-076	08-Mar-2024 12:00	0229_MW119_240308	✓
ET2401539-079	08-Mar-2024 17:00	0229_QC501_240308	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
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- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(SOIL) EP231C: Perfluoroalkyl Sulfonamides
(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(SOIL) EP231P: PFAS Sums
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

CERTIFICATE OF ANALYSIS

Work Order	: **ET2401603**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 15-Mar-2024 08:40
Order number	: 60612487_3.1	Date Analysis Commenced	: 22-Mar-2024
C-O-C number	: 64989	Issue Date	: 25-Mar-2024 17:25
Sampler	: [redacted]		
Site	: QLD_0229		
Quote number	: EB23AECOMAU0017		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- $$ conducted by ALS Townsville, NATA accreditation no. 825, (Site no. 23472 for Chemical Testing and Site no. 23313 for Biological Testing)
- All remaining analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_QC354_240312	0229_QC355_240312	0229_QC551_240312	----	----
			Sampling date / time	12-Mar-2024 16:29	12-Mar-2024 16:41	12-Mar-2024 16:43	----	----
Compound	CAS Number	LOR	Unit	ET2401603-001	ET2401603-002	ET2401603-003	--------	--------
				Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_QC354_240312	0229_QC355_240312	0229_QC551_240312	----	----
			Sampling date / time	12-Mar-2024 16:29	12-Mar-2024 16:41	12-Mar-2024 16:43	----	----
Compound	CAS Number	LOR	Unit	ET2401603-001	ET2401603-002	ET2401603-003	--------	--------
				Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**92.2**	**91.6**	**97.4**	----	----
13C8-PFOA	----	0.02	%	**99.8**	**92.8**	**100**	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ET2401603**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 15-Mar-2024
Site	: QLD_0229	Issue Date	: 25-Mar-2024
Sampler	: [redacted]	No. of samples received	: 3
Order number	: 60612487_3.1	No. of samples analysed	: 3

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)		***Sample Date***	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0229_QC354_240312, 0229_QC551_240312	0229_QC355_240312,	**12-Mar-2024**	**22-Mar-2024**	08-Sep-2024	✓	**25-Mar-2024**	08-Sep-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0229_QC354_240312, 0229_QC551_240312	0229_QC355_240312,	**12-Mar-2024**	**22-Mar-2024**	08-Sep-2024	✓	**25-Mar-2024**	08-Sep-2024	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0229_QC354_240312, 0229_QC551_240312	0229_QC355_240312,	**12-Mar-2024**	**22-Mar-2024**	08-Sep-2024	✓	**25-Mar-2024**	08-Sep-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0229_QC354_240312, 0229_QC551_240312	0229_QC355_240312,	**12-Mar-2024**	**22-Mar-2024**	08-Sep-2024	✓	**25-Mar-2024**	08-Sep-2024	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0229_QC354_240312, 0229_QC551_240312	0229_QC355_240312,	**12-Mar-2024**	**22-Mar-2024**	08-Sep-2024	✓	**25-Mar-2024**	08-Sep-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	3	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

QUALITY CONTROL REPORT

Work Order	: **ET2401603**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0229_PFASOMP_24	Date Samples Received	: 15-Mar-2024
Order number	: 60612487_3.1	Date Analysis Commenced	: 22-Mar-2024
C-O-C number	: 64989	Issue Date	: 25-Mar-2024
Sampler	: [redacted]		
Site	: QLD_0229		
Quote number	: EB23AECOMAU0017		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5681660)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	88.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	87.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	90.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	98.3	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	91.2	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	80.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5681660)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	108	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	96.4	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	79.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	83.9	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	87.7	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.9	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	85.3	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	73.9	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	84.9	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	72.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	90.6	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5681660)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	96.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	131	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	107	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	91.9	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	95.1	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	89.7	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.3	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5681660)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5681660) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	88.5	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	99.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	99.6	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	79.3	70.0	130
EP231P: PFAS Sums (QCLot: 5681660)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ET2401603**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Townsville
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 5175 TOWNSVILLE QLD, AUSTRALIA 4870	Address	: 13 Carlton Street, Kirwan Townsville QLD Australia 4815
E-mail	: [redacted]	E-mail	: [redacted]@alsglobal.com
Telephone	: ----	Telephone	: +61 7 3552 8616
Facsimile	: ----	Facsimile	:
Project	: QLD_0229_PFASOMP_24	Page	: 1 of 3
Order number	: 60612487_3.1	Quote number	: EB2023AECOMAU0017 (EB23AECOMAU0017)
C-O-C number	: 64989	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: QLD_0229		
Sampler	: [redacted]		

Dates

Date Samples Received	: 15-Mar-2024 08:40	Issue Date	: 15-Mar-2024
Client Requested Due Date	: 22-Mar-2024	Scheduled Reporting Date	: **22-Mar-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 24.9°C
Receipt Detail	:	No. of samples received / analysed	: 3 / 3

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- $$ conducted by ALS Townsville, NATA accreditation no. 825, (Site no. 23472 for Chemical Testing and Site no. 23313 for Biological Testing)
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- All remaining analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
ET2401603-001	12-Mar-2024 16:29	0229_QC354_240312	✓
ET2401603-002	12-Mar-2024 16:41	0229_QC355_240312	✓
ET2401603-003	12-Mar-2024 16:43	0229_QC551_240312	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email [redacted]
- Chain of Custody (CoC) (COC) — Email [redacted]
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email [redacted]
- EDI Format - ESDAT (ESDAT) — Email [redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums

AECOM Aust Pty Ltd TSV
Level 5/7-13 Tomlins St
South Townsville
QLD 4810

NATA Accredited
Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **1076794-W**
Project name
Project ID QLD_0229_PFASOMP_24
Received Date Mar 11, 2024

Client Sample ID			0229_QC200_240304	0229_QC202_240304	0229_QC204_240307	0229_QC205_240308
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			TW24-Ma0023382	TW24-Ma0023384	TW24-Ma0023386	TW24-Ma0023387
Date Sampled			Mar 04, 2024	Mar 04, 2024	Mar 07, 2024	Mar 08, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.03	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.02	< 0.01	[N09]0.11	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.02	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	140	82	133	93
13C5-PFPeA (surr.)	1	%	153	103	168	129
13C5-PFHxA (surr.)	1	%	21	91	112	79
13C4-PFHpA (surr.)	1	%	156	97	115	87
13C8-PFOA (surr.)	1	%	92	96	118	86
13C5-PFNA (surr.)	1	%	120	107	119	80
13C6-PFDA (surr.)	1	%	91	78	88	76
13C2-PFUnDA (surr.)	1	%	68	72	90	78
13C2-PFDoDA (surr.)	1	%	50	88	110	87
13C2-PFTeDA (surr.)	1	%	107	54	77	53
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	71	68	97	73
D3-N-MeFOSA (surr.)	1	%	22	65	INT	174

Client Sample ID			0229_QC200_240304	0229_QC202_240304	0229_QC204_240307	0229_QC205_240308
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			TW24-Ma0023382	TW24-Ma0023384	TW24-Ma0023386	TW24-Ma0023387
Date Sampled			Mar 04, 2024	Mar 04, 2024	Mar 07, 2024	Mar 08, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	32	96	INT	INT
D7-N-MeFOSE (surr.)	1	%	32	35	72	60
D9-N-EtFOSE (surr.)	1	%	37	37	78	56
D5-N-EtFOSAA (surr.)	1	%	64	74	83	68
D3-N-MeFOSAA (surr.)	1	%	74	68	84	71
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	[N09]0.02	0.01	0.08	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	0.02	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	0.06	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.07	< 0.01	[N09]0.52	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	0.02	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.05	< 0.01	[N09]0.24	[N09]0.02
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	106	93	117	89
18O2-PFHxS (surr.)	1	%	110	97	110	97
13C8-PFOS (surr.)	1	%	106	91	113	88
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	134	90	141	56
13C2-6:2 FTSA (surr.)	1	%	124	138	118	65
13C2-8:2 FTSA (surr.)	1	%	72	92	74	71
13C2-10:2 FTSA (surr.)	1	%	49	78	100	72
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.12	< 0.01	0.76	0.02
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.05	< 0.01	0.26	0.02
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.12	< 0.01	0.78	0.02
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.16	< 0.05	1	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	0.16	< 0.1	1.1	< 0.1

Client Sample ID			0229_QC206_240308	0229_QC250_240305	0229_QC252_240307	0229_QC500_240308
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			TW24-Ma0023388	TW24-Ma0023389	TW24-Ma0023391	TW24-Ma0023392
Date Sampled			Mar 08, 2024	Mar 05, 2024	Mar 07, 2024	Mar 08, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.02	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	[N09]0.12	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.04	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	0.04	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	89	79	78	131
13C5-PFPeA (surr.)	1	%	108	98	95	144
13C5-PFHxA (surr.)	1	%	78	82	85	92
13C4-PFHpA (surr.)	1	%	82	98	88	100
13C8-PFOA (surr.)	1	%	81	93	83	114
13C5-PFNA (surr.)	1	%	80	112	129	97
13C6-PFDA (surr.)	1	%	54	87	103	77
13C2-PFUnDA (surr.)	1	%	57	82	103	81
13C2-PFDoDA (surr.)	1	%	69	88	115	104
13C2-PFTeDA (surr.)	1	%	47	54	61	65
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	68	78	91	71
D3-N-MeFOSA (surr.)	1	%	180	97	127	INT
D5-N-EtFOSA (surr.)	1	%	INT	151	197	INT
D7-N-MeFOSE (surr.)	1	%	49	45	60	65
D9-N-EtFOSE (surr.)	1	%	46	46	56	71
D5-N-EtFOSAA (surr.)	1	%	55	78	123	78
D3-N-MeFOSAA (surr.)	1	%	52	76	91	74
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.08	< 0.01	0.02	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.02	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	0.07	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]1.2	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	0.04	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]2.4	[N09]0.02	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			0229_QC206_240308	0229_QC250_240305	0229_QC252_240307	0229_QC500_240308
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			TW24-Ma0023388	TW24-Ma0023389	TW24-Ma0023391	TW24-Ma0023392
Date Sampled			Mar 08, 2024	Mar 05, 2024	Mar 07, 2024	Mar 08, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
13C3-PFBS (surr.)	1	%	85	94	92	98
18O2-PFHxS (surr.)	1	%	75	102	98	96
13C8-PFOS (surr.)	1	%	75	97	113	90
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	87	104	108	86
13C2-6:2 FTSA (surr.)	1	%	95	176	INT	92
13C2-8:2 FTSA (surr.)	1	%	54	108	171	68
13C2-10:2 FTSA (surr.)	1	%	56	74	125	82
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	3.6	0.02	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	2.44	0.02	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	3.64	0.02	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	3.87	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	4.05	< 0.1	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Mar 12, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Mar 12, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Mar 12, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Mar 12, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: AECOM Aust Pty Ltd TSV
Address: Level 5/7-13 Tomlins St
South Townsville
QLD 4810

Project Name:
Project ID: QLD_0229_PFASOMP_24

Order No.: 60612487_3.1
Report #: 1076794
Phone: [redacted]
Fax:

Received: Mar 11, 2024 1:42 PM
Due: Mar 18, 2024
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	0229_QC200_240304	Mar 04, 2024		Water	TW24-Ma0023382		X
2	0229_QC201_240304	Mar 04, 2024		Soil	TW24-Ma0023383	X	X
3	0229_QC202_240304	Mar 04, 2024		Water	TW24-Ma0023384		X
4	0229_QC203_240304	Mar 04, 2024		Soil	TW24-Ma0023385	X	X
5	0229_QC204_240307	Mar 07, 2024		Water	TW24-Ma0023386		X
6	0229_QC205_240308	Mar 08, 2024		Water	TW24-Ma0023387		X
7	0229_QC206_240308	Mar 08, 2024		Water	TW24-Ma0023388		X
8	0229_QC250_240305	Mar 05, 2024		Water	TW24-Ma0023389		X

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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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NATA# 2377
Site# 2370

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NZBN: 9429046024954

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Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: AECOM Aust Pty Ltd TSV
Address: Level 5/7-13 Tomlins St
South Townsville
QLD 4810

Project Name:
Project ID: QLD_0229_PFASOMP_24

Order No.: 60612487_3.1
Report #: 1076794
Phone: [redacted]
Fax:

Received: Mar 11, 2024 1:42 PM
Due: Mar 18, 2024
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
9	0229_QC251_240305	Mar 05, 2024		Soil	TW24-Ma0023390	X	X
10	0229_QC252_240307	Mar 07, 2024		Water	TW24-Ma0023391		X
11	0229_QC500_240308	Mar 08, 2024		Water	TW24-Ma0023392		X
Test Counts						3	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	102			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	87			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	90			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	101			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	97			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	99			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	101			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	99			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	140			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	119			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	88			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	86			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	75			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	79			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	87			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	75			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	96			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	96			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	69			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	99			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	93			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	95			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	107			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	99			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	92			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	90			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	123			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	120			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	87			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B24-Ma0031209	NCP	%	97			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B24-Ma0031209	NCP	%	62			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B24-Ma0031209	NCP	%	130			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B24-Ma0031209	NCP	%	118			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B24-Ma0031209	NCP	%	116			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B24-Ma0029591	NCP	%	90			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B24-Ma0031209	NCP	%	125			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B24-Ma0031209	NCP	%	103			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B24-Ma0031209	NCP	%	130			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B24-Ma0031209	NCP	%	149			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B24-Ma0031209	NCP	%	120			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B24-Ma0031209	NCP	%	144			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B24-Ma0031209	NCP	%	98			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B24-Ma0031209	NCP	%	132			50-150	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorononanesulfonic acid (PFNS)	B24-Ma0031209	NCP	%	91			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B24-Ma0029591	NCP	%	96			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B24-Ma0031209	NCP	%	131			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B24-Ma0031209	NCP	%	111			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B24-Ma0031209	NCP	%	76			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B24-Ma0031209	NCP	%	135			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B24-Ma0031209	NCP	%	142			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B24-Ma0031209	NCP	%	146			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B24-Ma0031209	NCP	%	142			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B24-Ma0032807	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B24-Ma0032807	NCP	ug/L	0.01	0.01	19	30%	Pass	
Perfluorononanoic acid (PFNA)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B24-Ma0032807	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B24-Ma0032807	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B24-Ma0032807	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B24-Ma0032807	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B24-Ma0032807	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B24-Ma0032807	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B24-Ma0032807	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B24-Ma0032807	NCP	ug/L	0.02	0.02	10	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B24-Ma0032807	NCP	ug/L	0.07	0.07	2.7	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B24-Ma0032807	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B24-Ma0032807	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q05	The matrix spike concentration is less than five times the background concentration in the sample - therefore the spike recovery cannot be determined
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Authorised by:

[redacted] Analytical Services Manager
[redacted] Senior Analyst-PFAS
[redacted] Senior Analyst-PFAS

[redacted]

Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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South Townsville
QLD 4810

NATA Accredited
Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **1076794-S**
Project name
Project ID QLD_0229_PFASOMP_24
Received Date Mar 11, 2024

Client Sample ID			**0229_QC201_240304**	**0229_QC203_240304**	**0229_QC251_240305**
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**TW24-Ma0023383**	**TW24-Ma0023385**	**TW24-Ma0023390**
Date Sampled			**Mar 04, 2024**	**Mar 04, 2024**	**Mar 05, 2024**
Test/Reference	LOR	Unit			
Sample Properties					
% Moisture	1	%	31	31	22
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	87	83	74
13C5-PFPeA (surr.)	1	%	89	86	77
13C5-PFHxA (surr.)	1	%	89	90	84
13C4-PFHpA (surr.)	1	%	86	86	74
13C8-PFOA (surr.)	1	%	96	90	85
13C5-PFNA (surr.)	1	%	88	85	93
13C6-PFDA (surr.)	1	%	81	85	82
13C2-PFUnDA (surr.)	1	%	119	121	122
13C2-PFDoDA (surr.)	1	%	112	120	113
13C2-PFTeDA (surr.)	1	%	75	82	77
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10

Client Sample ID			0229_QC201_240304	0229_QC203_240304	0229_QC251_240305
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			TW24-Ma0023383	TW24-Ma0023385	TW24-Ma0023390
Date Sampled			Mar 04, 2024	Mar 04, 2024	Mar 05, 2024
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonamido substances					
13C8-FOSA (surr.)	1	%	75	72	75
D3-N-MeFOSA (surr.)	1	%	115	111	103
D5-N-EtFOSA (surr.)	1	%	122	108	125
D7-N-MeFOSE (surr.)	1	%	95	97	95
D9-N-EtFOSE (surr.)	1	%	69	68	56
D5-N-EtFOSAA (surr.)	1	%	132	151	167
D3-N-MeFOSAA (surr.)	1	%	142	143	165
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	107	111	115
18O2-PFHxS (surr.)	1	%	99	97	93
13C8-PFOS (surr.)	1	%	101	93	99
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	58	64	32
13C2-6:2 FTSA (surr.)	1	%	57	63	52
13C2-8:2 FTSA (surr.)	1	%	61	62	64
13C2-10:2 FTSA (surr.)	1	%	158	165	166
PFASs Summations					
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Brisbane	Mar 11, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Mar 13, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Mar 13, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Mar 13, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Mar 13, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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ABN: 50 005 085 521

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: AECOM Aust Pty Ltd TSV
Address: Level 5/7-13 Tomlins St
South Townsville
QLD 4810

Project Name:
Project ID: QLD_0229_PFASOMP_24

Order No.: 60612487_3.1
Report #: 1076794
Phone: [redacted]
Fax:

Received: Mar 11, 2024 1:42 PM
Due: Mar 18, 2024
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	0229_QC200_240304	Mar 04, 2024		Water	TW24-Ma0023382		X
2	0229_QC201_240304	Mar 04, 2024		Soil	TW24-Ma0023383	X	X
3	0229_QC202_240304	Mar 04, 2024		Water	TW24-Ma0023384		X
4	0229_QC203_240304	Mar 04, 2024		Soil	TW24-Ma0023385	X	X
5	0229_QC204_240307	Mar 07, 2024		Water	TW24-Ma0023386		X
6	0229_QC205_240308	Mar 08, 2024		Water	TW24-Ma0023387		X
7	0229_QC206_240308	Mar 08, 2024		Water	TW24-Ma0023388		X
8	0229_QC250_240305	Mar 05, 2024		Water	TW24-Ma0023389		X

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Project Name:
Project ID: QLD_0229_PFASOMP_24

Order No.: 60612487_3.1
Report #: 1076794
Phone: [redacted]
Fax:

Received: Mar 11, 2024 1:42 PM
Due: Mar 18, 2024
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
9	0229_QC251_240305	Mar 05, 2024		Soil	TW24-Ma0023390	X	X
10	0229_QC252_240307	Mar 07, 2024		Water	TW24-Ma0023391		X
11	0229_QC500_240308	Mar 08, 2024		Water	TW24-Ma0023392		X
Test Counts						3	11

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	119			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	107			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	118			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	115			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	105			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	112			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	125			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	115			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	109			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	115			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	101			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	85			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	95			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	112			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	108			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	130			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	124			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	126			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	100			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	115			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	98			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	98			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	90			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	106			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	104			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	88			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	78			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	126			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	138			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	TW24-Ma0023385	CP	%	117			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	TW24-Ma0023385	CP	%	112			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	TW24-Ma0023385	CP	%	115			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	TW24-Ma0023385	CP	%	107			50-150	Pass	
Perfluorooctanoic acid (PFOA)	TW24-Ma0023385	CP	%	110			50-150	Pass	
Perfluorononanoic acid (PFNA)	TW24-Ma0023385	CP	%	105			50-150	Pass	
Perfluorodecanoic acid (PFDA)	TW24-Ma0023385	CP	%	122			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	TW24-Ma0023385	CP	%	121			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	TW24-Ma0023385	CP	%	117			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	TW24-Ma0023385	CP	%	127			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	TW24-Ma0023385	CP	%	124			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	TW24-Ma0023385	CP	%	84			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	TW24-Ma0023385	CP	%	89			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	TW24-Ma0023385	CP	%	106			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	TW24-Ma0023385	CP	%	95			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	TW24-Ma0023385	CP	%	123			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	TW24-Ma0023385	CP	%	123			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	TW24-Ma0023385	CP	%	128			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	TW24-Ma0023385	CP	%	107			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	TW24-Ma0023385	CP	%	118			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	TW24-Ma0023385	CP	%	106			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	TW24-Ma0023385	CP	%	107			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	TW24-Ma0023385	CP	%	105			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	TW24-Ma0023385	CP	%	104			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	TW24-Ma0023385	CP	%	107			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	TW24-Ma0023385	CP	%	89			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	TW24-Ma0023385	CP	%	139			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	TW24-Ma0023385	CP	%	117			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	TW24-Ma0023385	CP	%	133			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	TW24-Ma0023385	CP	%	143			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	B24-Ma0024280	NCP	%	13	13	3.0	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorodecanoic acid (PFDA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	TW24-Ma0023383	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	TW24-Ma0023383	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	TW24-Ma0023383	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	TW24-Ma0023383	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager
[redacted] Senior Analyst-PFAS
[redacted] Senior Analyst-Sample Properties

[redacted]
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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ABN: 50 005 085 521

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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd
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Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

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Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: AECOM Aust Pty Ltd TSV
Address: Level 5/7-13 Tomlins St
South Townsville
QLD 4810

Order No.: 60612487_3.1
Report #: 1076794
Phone: [redacted]
Fax:

Received: Mar 11, 2024 1:42 PM
Due: Mar 18, 2024
Priority: 5 Day
Contact Name: [redacted]

Project Name:
Project ID: QLD_0229_PFASOMP_24

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	0229_QC200_240304	Mar 04, 2024		Water	TW24-Ma0023382		X
2	0229_QC201_240304	Mar 04, 2024		Soil	TW24-Ma0023383	X	X
3	0229_QC202_240304	Mar 04, 2024		Water	TW24-Ma0023384		X
4	0229_QC203_240304	Mar 04, 2024		Soil	TW24-Ma0023385	X	X
5	0229_QC204_240307	Mar 07, 2024		Water	TW24-Ma0023386		X
6	0229_QC205_240308	Mar 08, 2024		Water	TW24-Ma0023387		X
7	0229_QC206_240308	Mar 08, 2024		Water	TW24-Ma0023388		X
8	0229_QC250_240305	Mar 05, 2024		Water	TW24-Ma0023389		X

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: AECOM Aust Pty Ltd TSV
Address: Level 5/7-13 Tomlins St
South Townsville
QLD 4810

Project Name:
Project ID: QLD_0229_PFASOMP_24

Order No.: 60612487_3.1
Report #: 1076794
Phone: [redacted]
Fax:

Received: Mar 11, 2024 1:42 PM
Due: Mar 18, 2024
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
9	0229_QC251_240305	Mar 05, 2024		Soil	TW24-Ma0023390	X	X
10	0229_QC252_240307	Mar 07, 2024		Water	TW24-Ma0023391		X
11	0229_QC500_240308	Mar 08, 2024		Water	TW24-Ma0023392		X
Test Counts						3	11

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Eurofins Environment Testing Australia Pty Ltd

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Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd

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+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Asb)	Christchurch	Tauranga
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Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	AECOM Aust Pty Ltd TSV
Contact name:	[redacted]
Project name:	Not provided
Project ID:	QLD_0229_PFASOMP_24
Turnaround time:	5 Day
Date/Time received	Mar 11, 2024 1:42 PM
Eurofins reference	1076794

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✗	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Some typos on sample dates.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted] **on phone : or by email:** [redacted]

Results will be delivered electronically via email to [redacted] - [redacted]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd TSV email address.

Global Leader - Results you can trust

Appendix F

Calibration Certificates

ANZ

AECOM

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP - LB	**Project Number:**	60612487-3.1
Project Location:	Townsville	**Client:**	Dept. of Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Aimet
Make and Model:	YSI Quatro Pro Plus
Serial Number:	20M101181

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	4/3/24 1100				
Parameter	Acidity		Conductivity	ORP / Dissolved Oxygen	
Units	pH	pH	µS/cm	~~mV~~ / ~~ppm~~	~~ppm~~ %
Calibration Standard Concentration:	4.00	7.00	2918	228.0	100
Calibration Reading:	4.04	7.05	2787	221.7	115.2
Calibration Temperature:	28.1	27.9	27.9	28.1	28.6

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — 4/3/24

Field Staff Signature — Date

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS DMP - LAVARACK	**Project Number:**	60612487 - 3.1
Project Location:	ANNANDALE	**Client:**	DEPT OF DEFENCE
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	AECOM
Make and Model:	YSI Pro DSS
Serial Number:	18K102334

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	4/3/24 11:00				
Parameter	Acidity		Conductivity	ORP	Dissolved Oxygen
Units	pH	pH	µS/cm	mV ~~ppm~~	~~ppm~~ %
Calibration Standard Concentration:	4.01	7.00	3112	218	100
Calibration Reading:	29.3	29.9	31.6	31.9	32.9
Calibration Temperature:	4.03	6.94	3144	223.8	102.9

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

4/3/24

Date

Distribution: Project Central File

ANZ

AECOM

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP_LAVARACK	**Project Number:**	60612487-3.1
Project Location:	ANNANDALE/TIMUA	**Client:**	DEPT OF DEFENCE
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	AECOM
Make and Model:	YSI PRODSS
Serial Number:	18K102334

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	0845 5/3/24				
Parameter	Acidity		Conductivity	ORP / Dissolved Oxygen	
Units	pH	pH	µS/cm	~~mV~~ ~~ppm~~	ppm ~~%~~
Calibration Standard Concentration:	4.01	7.00	3116	222.1	100
Calibration Reading:	4.05	7.05	3007	216.6	98.5
Calibration Temperature:	31.4	31.3	31.6	31.9	30.6

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

5/3/24 — Date

Distribution: Project Central File

ANZ

AECOM

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS ONP - LB	**Project Number:**	60612487-3-1
Project Location:	Ross River	**Client:**	Dept of Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	AECOM
Make and Model:	451 Pro DSS
Serial Number:	18K102334

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	7/3/24 0815				
Parameter	Acidity		Conductivity	ORP / Dissolved Oxygen	
Units	pH	pH	µS/cm	~~mV~~ ~~ppm~~	~~ppm~~ %
Calibration Standard Concentration:	4.00	7.00	2918	227.0	100
Calibration Reading:	3.97	6.89	2802	233.3	101.1
Calibration Temperature:	28.1	27.9	28.0	28.1	27.9

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — **Fieldwork Staff Signature**

7/3/24 — **Date**

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP Lavarack	**Project Number:**	60612487
Project Location:	Lavarack Barracks	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Aquaread
Make and Model:	Professional plus
Serial Number:	20M10481

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	7/03/24				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	4 pH	7 pH	µS/cm	ORP ~~ppm~~	% ~~ppm~~
Calibration Standard Concentration:	401	700	2760	229.4	100
Calibration Reading:	4.02	6.94	2875	227.7	84.9
Calibration Temperature:	27.1	27	26.9	27	33.4

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]
Fieldwork Staff Signature

7/3/24
Date

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612487
Project Location:	Lavarack Barracks	**Client:**	Dept of Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	AECOM
Make and Model:	YSI Pro DSS
Serial Number:	18K102334

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	12/03/24 12:10				
Parameter	Acidity		Conductivity	ORP	Dissolved Oxygen
Units	4 pH	7 pH	µS/cm	mV ~~ppm~~	~~ppm~~ %
Calibration Standard Concentration:	4.00	7.00	2760	226.1	99.5
Calibration Reading:	4.03	7.01	3238	285.1	97.7
Calibration Temperature:	29.1°c	29.2°c	28.8°c	28.9°c	29.1°c

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

12.03.24

Date

Distribution: Project Central File

Multi Parameter Water Meter

Instrument **YSI Quatro Pro Plus**
Serial No. **20M101181**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.02		413975	pH 7.02
2. pH 4.00		pH 4.00		405966	pH 4.00
3. ORP		236.7mV		406331/409855	236.7mV
4. EC		2760uS		420141	2760uS
5. D.O		100%		407802	100%
6. Temp		21.5		Testomini901	21.5

Calibrated by: [redacted]

Calibration date: **19/02/2024**

Next calibration due: **20/08/2024**

Oil / Water Interface Meter

Instrument **Geotech Interface Meter (30M)**
Serial No. **4087**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: **26/02/2024**

Next calibration due: **26/04/2024**

Oil / Water Interface Meter

Instrument **Interface Meter (60M)**
Serial No. **288052**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Tested by: [redacted] [redacted]

Test date: 26/02/2024

Next Test due: 27/08/2024

Oil / Water Interface Meter

Instrument **Interface Meter (30M)**
Serial No. **312521**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted] [redacted]

Calibration date: **7/03/2024**

Next calibration due: **7/09/2024**

Design
for a better
future /

Department of Defence

PFAS Ongoing Monitoring Plan
Lavarack Barracks

Dry Season Sampling Event - October 2024

February 2025

Question today
Imagine tomorrow
Create for the future

PFAS Ongoing Monitoring Plan
Lavarack Barracks
Dry Season Sampling Event - October 2024

Department of Defence

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Sydney NSW 2001

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wsp.com

Rev	Date	Details
Rev0	29 November 2024	Draft
Rev1	16 January 2025	Draft
RevA	10 February 2025	Final
RevB	26 February 2025	Final; this revision addresses Defence review comments of RevA

	Name	Date	Signature
Prepared by:	[redacted]	26 February 2025	[redacted]
Reviewed by:	[redacted]	26 February 2025	
Approved by:	[redacted]	26 February 2025	

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Table of contents

Abbreviations iii

1 Introduction 1

1.1 Background 1

1.2 Objectives 1

1.3 Scope of Works 1

1.4 Regulatory and Policy Context 2

1.4.1 Commonwealth Legislation 2
1.4.2 Defence Policy, Standards, and Guidance 3
1.4.3 State/Territory Legislation and Policy 3

2 Methodology 4

2.1 Groundwater Sampling 4

2.2 Surface Water Sampling 5

2.3 Sediment Sampling 6

2.4 Deviations from the SAQP 6

3 Adopted Screening Criteria 8

4 Field Observations and Results 10

4.1 Field Observations 10

4.2 Groundwater 10

4.2.1 Groundwater Conditions 10
4.2.2 Groundwater Analytical Results 11

4.3 Surface Water 12

4.3.1 Surface Water Conditions 12
4.3.2 Surface Water Analytical Results 13

4.4 Sediment 13

4.4.1 Sediment Observations 13
4.4.2 Sediment Analytical Results 14

4.5 Triggers for Action and/or Review 14

4.5.1 Screening Triggers – Groundwater 14
4.5.2 Screening Triggers – Surface Water 15
4.5.3 Screening Trigger Assessment Summary 16

4.6 Quality Assurance and Quality Control 21

5 Sampling Event Summary 22

6 Recommendations 24

Bibliography 25

List of tables

Table 2.1 Groundwater Sampling Locations..... 4
Table 2.2 Surface Water Sampling Locations 5
Table 2.3 Sediment Sampling Locations 6
Table 3.1 PFAS Screening Criteria 8
Table 4.1 Summary of groundwater conditions 10
Table 4.2 Locations of new historical maximum concentrations in groundwater 11
Table 4.3 Summary of surface water conditions.....12
Table 4.4 Locations of new historical maximum concentrations in surface water.....13
Table 4.5 Summary of sediment conditions.....14
Table 4.6 Locations of new historical maximum concentrations in sediment.....14
Table 4.7 Groundwater Trigger Screening 17
Table 4.8 Surface Water Trigger Screening 19

List of appendices

Appendix A Figures
Appendix B Tables
Appendix C Laboratory Reports
Appendix D Data Validation
Appendix E Calibration Certificates

Abbreviations

AFFF	Aqueous Film Forming Foam
AHD	Australian Height Datum
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measures, as amended 2013
Base	Lavarack Barracks
DO	Dissolved Oxygen
EC	Electrical Conductivity
EIL	Environmental investigation level
HIL	Health investigation level
LOR	Limit of Reporting
Management Area	The geographical area subject to Defence risk management actions. May include private or Defence owned detached properties beyond the Base boundaries.
Off-Base	Outside the Defence property, but within the Management Area
On-Base	On the Defence property
OMP	Ongoing Monitoring Plan
ORP	Oxidation-reduction potential
PFAS	Per- and polyfluoroalkyl Substances
PFAS NEMP	PFAS National Environmental Management Plan
PFHxS	Perfluorohexane sulfonate
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate
PMAP	PFAS Management Area Plan
QA	Quality Assurance
QC	Quality Control
Risk management actions	Remediation and management actions to address potential risks to receptors from PFAS contamination
SAQP	Sampling, Analysis and Quality Plan
Source	A source can be primary or secondary and is the place or event from which the contamination originated. Primary sources are generally areas where AFFF was used or stored. Secondary sources may be an accumulation of contamination in the environment, such as groundwater, surface water bodies, or sediments.

1 Introduction

Department of Defence engaged WSP Australia Pty Ltd (WSP) to implement the ongoing monitoring plan (OMP) for per-and poly-fluoroalkyl substances (PFAS) at the Lavarack Barracks (the Base) and the Lavarack Barracks Management Area located in Townsville, Queensland, as defined in the PFAS Management Area Plan (PMAP; Department of Defence, 2020)[1]. This Sampling Event Factual Report (Report) was prepared to report the results of the dry season sampling event completed at the Lavarack Barracks Management Area during October 2024. A Base locality plan is provided in Figure 1, Appendix A and Base features and primary and secondary PFAS source areas are provided in Figure 2, Appendix A.

This report has been prepared with reference to the *National Environment Protection (Assessment of Site Contamination) Measures 1999* (NEPM; amended 2013), the Heads of EPAs Australia and New Zealand (HEPA; 2020) *PFAS National Environmental Management Plan, Version 2.0* (PFAS NEMP), Defence estate and environmental strategies and Defence PFAS-specific strategies and guidance.

1.1 Background

The purpose of the OMP is to undertake ongoing monitoring of PFAS in the On-Base and Off-Base environment and to assess for changes in risks to human and ecological receptors from PFAS originating from the Base. In addition, the data will enable to identify changes to sources, transport pathways and/or receptors and to assess the influence that risk management actions including remediation activities at the Base, have had on PFAS in the environment. The OMP has been ongoing since October 2020.

A Sampling, Analysis, and Quality Plan (SAQP)[2] was prepared for the OMP to provide the context, justification, and details of the selected sampling and analysis approach for the On-Base and Off-Base monitoring locations within the Lavarack Barracks Management Area. The works were conducted in general accordance with the SAQP (WSP, 2024) previously prepared for the Base. Deviations from the SAQP are discussed in Section 2.4 below. The OMP for the Base includes groundwater, surface water and sediment sampling from selected locations within the Management Area. Sampling locations are provided in Figure 3 (Groundwater) and Figure 4 (Surface Water and Sediment), Appendix A.

1.2 Objectives

The objective of the OMP, as part of the PMAP (Department of Defence, 2020), is to gather data that will help Defence establish an accurate and current understanding of the distribution, concentration, and movement of PFAS via groundwater, surface water, and sediment components on the Base and in the surrounding downstream receiving environments. In addition, data gathered during this sampling event will help promptly identify potential risks and guide Defence's strategy for managing PFAS to protect human health and the environment, including updates and revisions to the PMAP.

1.3 Scope of Works

To meet the OMP objectives, the following scope of work was undertaken in October 2024:

- Preliminaries, including a review of the SAQP and preparation of safety documentation;

[1] Department of Defence (2020), *PFAS Management Area Plan, Lavarack Barracks, Townsville*. Revision 5, issued August 2020.

[2] WSP Australia Pty Ltd (2024), *PFAS Ongoing Monitoring Plan, Lavarack Barracks, Sampling Analysis and Quality Plan*. Revision A, issued October 2024.

- Gauging 45 groundwater monitoring wells. Groundwater monitoring wells MW101 and MW235S were dry and MW111B could not be located during the current sampling event.
- It is noted that seven additional wells were sampled during the current round compared to the previous OMP sampling events (i.e., MW019, MW021, MW112, MW345, MW014A, MW077, and MW349); these additional wells were included based on recommendations by Defence and are associated with areas undergoing remediation efforts; they have been included to provide data that will be used to inform the effectiveness of remediation (Note, well MW11B, which could not be located, was also an additional monitoring well added to the sampling event based on Defence recommendations);
- Collection of groundwater samples and field physico-chemical water quality parameters from 43 groundwater monitoring wells On- and Off-Base for analysis of the standard suite of 28 PFAS compounds at standard laboratory limits of reporting (LOR). Refer to Figure 3, Appendix A for locations;
- Collection of 31 sediment samples and 22 co-located surface water samples (where water was present) for analysis of the standard suite of 28 PFAS compounds at standard laboratory LORs. In addition, physico-chemical water quality parameters were collected in-situ at the surface water locations. Refer to Figure 4, Appendix A for locations;
- Completion of a field quality assurance (QA)/quality control (QC) program in accordance with the SAQP, including analysis of duplicate, triplicate, trip blank and rinsate samples; and
- Preparation of this report presenting the data collected from the dry season sampling event.

1.4 Regulatory and Policy Context

Lavarack Barracks is a Department of Defence property subject to Commonwealth Government jurisdiction. The collection and assessment of PFAS data for the OMP was completed in general accordance with the legislation, policy, standards, and guidance documents outlined below.

1.4.1 Commonwealth Legislation

- Australian and New Zealand Governments (ANZG) 2018, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*;
- *Environmental Protection and Biodiversity Conservation Act 1999;*
- Heads of EPAs Australia and New Zealand (HEPA) 2020, *PFAS National Environmental Management Plan*, *Version 2.0*;
- *National Environment Protection (Assessment of Site Contamination) Measures 1999* (NEPM; amended 2013);
- National Health and Medical Research Council (NHMRC), National Resources Management Ministerial Council (NRMMC) 2011, (Version 3.8, updated September 2022) *Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy*;
- NHMRC 2019, *Guidance on Per and Polyfluoroalkyl substances (PFAS) in Recreational Water*;
- Standards Australia 1998a, *Water Quality—Sampling. Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples (AS/NZS 5667.1:1998)*;
- Standards Australia 1998b, *Water Quality—Sampling. Part 4: Guidance on sampling from lakes, natural and man-made (AS/NZS 5667.4:1998)*;
- Standards Australia 1998c, *Water Quality—Sampling. Part 11: Guidance on sampling of groundwaters (AS/NZS 5667.11:1998)*; and
- Standards Australia 1998d. *Water Quality—Sampling. Part 12: Guidance on sampling of bottom sediments (AS/NZS 5667.12:1998)*.

1.4.2 Defence Policy, Standards, and Guidance

- Defence Environmental Policy;
- Defence Estate Strategy 2016-2036;
- Defence Environmental Strategy 2016-2036;
- Defence Contamination Management Manual 2018, Amended 2021;
- Defence PFAS Construction and Maintenance Framework Version 3.0, 2021; and
- Lavarack Barracks, Townsville PFAS Management Area Plan 2020. It is noted that this document is currently undergoing revision.

1.4.3 State/Territory Legislation and Policy

The following state legislation and policy does not have jurisdiction on the Base, although may be applied when potential environmental harm may occur to Off-Base environments and receptors:

- *Environmental Protection Act 1994 (QLD)*;
- *Environmental Protection Regulation 2019 (QLD)*; and
- *Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (QLD)*.

2 Methodology

The methods used and quality of fieldwork performed during the environmental services and investigation works were consistent with sampling procedures outlined in NEPM (1999 amended 2013) and PFAS NEMP (HEPA, 2020) to provide the required level of confidence in the quality of the environmental data collected during the sampling event. Fieldwork was undertaken by experienced field scientists/engineers and completed in general accordance with the SAQP (WSP, 2024). This SAQP describes general field investigation methods for the collection of samples for PFAS analyses and the specific investigation protocols required for the collection of field data and samples from groundwater, surface water, and sediment.

2.1 Groundwater Sampling

Forty-three (43) groundwater monitoring wells were gauged and sampled on 16 and 17 October 2024 to assess the condition of groundwater at On-Base and Off-Base monitoring locations. The groundwater gauging and sampling methods adopted for the sampling event are summarised in the SAQP (WSP, 2024) and the sampling locations are provided in Table 2.1. and Figure 3, Appendix A.

Table 2.1 Groundwater Sampling Locations

Investigation / Source Area	Well ID	Number of Wells Sampled
Eastern PFAS Contamination Area	MW018, MW019, MW021, MW111B, MW112, MW114, MW115, MW116, MW139	8
Former B Squadron	MW135	1
Former Fire Station	MW105, MW128, MW345	3
Former Fire Training Area	MW131	1
Former Helicopter Squadron	MW102	1
Lavarack Golf Course & Sporting Field	MW065, MW120, MW121, MW122, MW123S, MW123I	6
Monocell	MW014A, MW072, MW074, MW077, MW106, MW349	6
Stockpile Designated Area 2	MW141	1
Suspected AFFF Disposal Area	MW101	0
Top, Middle and Lower Dams	MW138	1
Base Boundary	MW002, MW003, MW118, MW119, MW124, MW125I, MW125S	7
Off-Base	MW205S, MW212, MW217, MW220S, MW226[1], MW232, MW233, MW235S, MW236S	8
Total		**43**

Notes:

Locations in grey were not sampled.

[1] - MW226 is not shown in the figures due to being located on private property.

The scope of work completed during this sampling event is in accordance with the SAQP (WSP, 2024), with the following changes:

- Groundwater monitoring well MW111B could not be located.
- Groundwater monitoring well MW101 was dry at 4.24 metres below top of casing (mBTOC). Well depth was also recorded at 4.15 mBTOC during the March 2024 sampling event.
- Groundwater monitoring well MW235S was blocked with plant roots at 5.30 mBTOC. Attempts to unblock the well during current sampling event were unsuccessful.
- Field physico-chemical water quality measurements were collected at every well location; however, instrument failure prevented the collection of dissolved oxygen measurements at some locations.
- Field physico-chemical water quality measurements for MW121were not reported due an oversight in the field during this sampling event.

Potential impacts of not sampling these locations are discussed in Section 2.4.

2.2 Surface Water Sampling

Surface water sampling at most On-Base and Off-Base surface water monitoring locations was conducted on 8 and 9 October 2024; samples from the Ross River were collected on 15 October 2024. A total of 22 surface water samples were collected during the current sampling event. The surface water sampling methods adopted for the sampling event are summarised in the SAQP (WSP, 2024) and the sampling locations are provided in Table 2.2 and Figure 4, Appendix A.

Table 2.2 Surface Water Sampling Locations

Investigation / Source Area	Location ID	Number of Locations Sampled
Eastern PFAS Contamination Area	SW119, SW121	2
Former Fire Station	SW109, SW110	1
Lavarack Golf Course & Sporting Field	SW129, SW130	0
Top, Middle and Lower Dams	SW139, SW140, SW144	3
On-Base Balance	SW113, SW120	0
Base Boundary	SW126, SW128, SW132, SW133, SW134, SW135, SW136	3
Off-Base	SW203, SW205, SW211, SW212, SW217, SW220, SW227[1], SW232, SW233, SW242, SW243, SW244[1], SW245[1]	13
Total		**22**

Notes:

Locations in grey were not sampled.

[1] – Monitoring stations SW227, SW244, and SW245 are located in Ross River upgradient from the Base.

The scope of work completed during this sampling event is in accordance with the SAQP (WSP, 2024), with the following changes:

- Monitoring locations SW110, SW129, SW130, SW113, SW120, SW126, SW128, SW133, and SW136 were dry during the current sampling round and therefore no surface water sample was collected at these locations.

- A water sample was collected at SW109; however, there were insufficient water to collect water quality parameters at this location.

Some surface water monitoring locations possessed ponded water (i.e., no flowing water was present); these locations and their conditions at the time of sampling are characterised in Table 3, Appendix B.

2.3 Sediment Sampling

Sediment sampling was conducted on 8, 9, and 15 October 2024. The sampling methods adopted for the sampling event are summarised in the SAQP (WSP, 2024) and the sampling locations are provided in Table 2.3 and Figure 4, Appendix A. All sediment locations are co-located with surface water locations.

Table 2.3 Sediment Sampling Locations

Investigation / Source Area	Location ID	Number of Locations Sampled
Eastern PFAS Contamination Area	SD119, SD121	2
Former Fire Station	SD109, SD110	2
Lavarack Golf Course & Sporting Field	SD129, SD130	2
Top, Middle and Lower Dams	SD139, SD140, SD144	3
On-Base Balance	SD113, SD120	2
Base Boundary	SD126, SD128, SD132, SD133, SD134, SD135, SD136	7
Off-Base	SD203, SD205, SD211, SD212, SD217, SD220, SD227, SD232, SD233, SD242, SD243, SD244, SD245	13
Total		**31**

The scope of work completed during this sampling event is in accordance with the SAQP (WSP, 2024).

2.4 Deviations from the SAQP

Groundwater monitoring wells MW101 and MW235S were not sampled during the current round due to the well being dry (MW101) and due to a blockage (MW235S). However, the impact of their exclusion from the data set is considered minor as data collected to date (since 2018) are considered representative of the general condition of these wells. In addition, groundwater monitoring well MW111B could not be located during the current sampling event (this location was added to the OMP for the first time for this sampling event). As no previous groundwater data are available for this location, it is believed that this well was not installed as part of a previous investigation program. Given this monitoring well is to provide up-gradient groundwater quality, as was requested by Defence to be included in the OMP, the impact of its exclusion on the OMP is considered negligible.

Field physico-chemical water quality parameter measurements were collected at every well location, except for MW121 (no field data were recorded) and at a number of locations where instrument failure prevented the collection of dissolved oxygen measurements. Given that historical data are available since 2018 and that the groundwater condition in the area is well established, the impact of these missing field data is considered minor.

Surface water samples were not collected at SW110, SW129, SW130, SW113, SW120, SW126, SW128, SW133, and SW136. These locations did not have water present during the dry season sampling.

3 Adopted Screening Criteria

Human health and environmental (ecological) investigation levels (HILs and EILs, respectively) for Perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), and perfluorohexane sulfonate (PFHxS) were derived in the PFAS NEMP (HEPA, 2020) using methods consistent with assumptions set out in the NEPM (1999 amended 2013). The criteria adopted for the sampling event are outlined in Table 3.1.

Table 3.1 PFAS Screening Criteria

Pathway	Compound	Criteria	Comments
Human Health Receptors			
Drinking water	PFOS + PFHxS	0.07 µg/L	The screening criteria for drinking water were sourced from the PFAS NEMP (HEPA, 2020) Only Off-Base groundwater and surface water data will be compared to these criteria.
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The screening criteria for recreational use were sourced from the PFAS NEMP (HEPA, 2020) On-Base and Off-Base surface water and groundwater data will be compared to these criteria.
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater and marine water (95% species protection values)	PFOS	0.13 µg/L	The screening criteria for freshwater and marine water (95% species protection) were from the PFAS NEMP (HEPA, 2020). Only Off-Base surface water data and On-Base Dams data will be compared to these criteria.
	PFOA	220 µg/L	

(1) Per the NEMP (HEPA, 2020), where the guideline values refer to the sum of PFOS and PFHxS, this includes PFOS only, PFHxS only, and the sum of the two.

These criteria will not be applied to all collected groundwater and surface water data. Instead, the criteria will be applicable to the monitoring location within the Management Area and the water type. For example, groundwater and surface water quality PFAS concentrations within the On-Base area will be limited to comparing to PFAS NEMP 2.0 (2020) Recreational Water guidelines. This is because the key risk profile for On-Base is the potential for body contact and exposure of groundwater and surface water; the primary pathway is potential for contact and exposure to workers from surface water/groundwater exposure during irrigation or during construction and excavation activities. There is no potable use of the water sources, including the On-Base Dams, or On-Base cultivation of home-grown produce for consumption. However, due to the aquatic habitat associated with the On-Base Dams for fish and other water-borne biota, including aquatic birds that visit the dams, and because aquatic life has been shown to bioaccumulate PFAS, measured PFAS in surface water samples from the dams (SW144, SW139, and SW140) will be compared to ecological guidelines.

Off-Base groundwater and surface water monitoring data will be compared the guidelines that represent the greater potential for risk exposure. For example:

— Groundwater – NHMRC (2019) Recreational Water and NEMP Drinking Water (HEPA, 2020) guidelines, as groundwater sources have the potential to be used for irrigation (lawns, primary produce that would be consumed) and drinking water sources.

— Surface Water – NHMRC (2019) Recreational Water and NEMP Interim Freshwater and Marine 95% (HEPA, 2020) guidelines, as surface water draining from the Base has the potential for recreational body contact in the drains and

creek and public area irrigation, and for wildlife, freshwater and marine aquatic biota, and human exposure (e.g., consumption of local fish) through exposure, water uptake, ingestion, and assimilation.

It is noted that at the time this Sampling Event Report was prepared, no PFAS NEMP (HEPA, 2020) endorsed criteria were available for PFAS in sediments. However, guideline criteria will be reviewed annually and updated based on the HEPA endorsed criteria at the time.

In November 2024, the NHRMC released draft health-based drinking water guidelines for public consultation. Defence is considering how the draft guidelines, if adopted, may affect its PFAS Investigation and Management Program, and communities surrounding the Defence Estate. An initial step to this is the adoption of a lower laboratory limit of reporting at select locations during the next sampling event to understand any future implications. Until the revised PFAS guideline values are finalised and published, the current guideline values remain in effect.

4 Field Observations and Results

4.1 Field Observations

Dry season sampling was conducted in October 2024 with most sediment and surface water sampling on 8 and 9 October and groundwater sampling on 16 and 17 October 2024. Sampling at the Ross River for surface water and sediment was completed on 15 October 2024. Following observations were made during the current sampling event:

- Weather was generally dry with no rain recorded during sampling. Only 2 mm of rainfall was reported for October 2024 and no rainfall was recorded for September 2024 at the Townsville Airport weather station.
- Road construction works were observed at the intersection of University Road and Stuart Drive. A fenced-off construction area was noted around MW220S and SD/SW220. However, the monitoring well and the surface water sampling locations were easily accessible.
- Construction works and earthworks were noted south of MW122.

4.2 Groundwater

4.2.1 Groundwater Conditions

The groundwater conditions encountered during the current sampling round are summarised in Table 4.1. Groundwater gauging data and field parameters are presented in Table 1, Appendix B.

Table 4.1 Summary of groundwater conditions

Parameter	Details
Access	All monitoring wells were accessible. MW111B could not be located during the current sampling event.
Field Observations	No odours or separate phase product were identified in the wells, except the following: — Mild hydrocarbon odour was noted at MW021; and — A slight sheen was noted at MW021, MW072, and MW077.
Depth to groundwater	Depth to groundwater ranged between 0.49 mBTOC (MW232) and 5.63 mBTOC (MW014A) during the sampling event.
Groundwater elevation and flow direction	Two different aquifers were previously identified within the Management Area. Groundwater elevation in the shallow aquifer ranged between 0.99 metres above the Australian Height Datum (mAHD; MW205S) and 24.97 mAHD (MW141). Groundwater elevation in the deeper aquifer ranged between 7.49 mAHD (MW115) and 18.48 mAHD (MW106). The groundwater flow direction within the shallow aquifer was inferred to be to the north towards the Ross River, consistent with previous assessments. Figure 5, Appendix A, shows the inferred flow direction. — Groundwater flow direction was implied from water level measurements from monitoring wells determined to not being tidally influenced. Monitoring wells MW019, MW077, MW226, MW139, and MW014A were not included in the flow contours assessment (Figure 5, Appendix A) because water levels from these

Parameter	Details
	wells were recorded post-sampling. The exclusion of the missing groundwater elevations from MW019, MW077, MW139 and MW014A did not result in a notable change to the water level contours or groundwater flow direction because they are located within a cluster of wells where groundwater elevations were measured. The exclusion of MW226 was because it is located on a private property.
Groundwater quality	Physico-chemical field water quality parameters measured during the current sampling round recorded the following: — Field-measured EC ranged between 435.5 µS/cm (MW128) and 39,004 µS/cm (MW220S). These results indicate that groundwater at the Management Area is variable, from fresh to brackish/saline. The majority of the wells had brackish water conditions. The highest EC readings were generally measured in Off-Base wells, although several high EC readings were also recorded at the On-Base wells. — Corrected redox potential measurements[1] ranged between -289.8 mV (MW139) and 291.1 mV (MW205S) indicating reducing conditions. — Field-measured pH ranged from 5.53 (MW014A) to 8.29 (MW102), indicating slightly acid to alkaline conditions. — DO measurements were recorded between 0.26 mg/L (MW232) and 7.77 mg/L (MW120). The majority of the DO readings were below 2 mg/L, indicating poorly to moderately oxygenated groundwater. It is noted that instrument failure prevented the collection of dissolved oxygen measurements at some locations.

[1] – Per YSI Environmental (YSI; 2005), the corrected redox potential (as mV) was determined by adding a factor to the oxidation-reduction potential (ORP) field measurement from the YSI 6-series sondes (i.e., corrected redox potential [mV] = YSI ORP + 200). The equation stated above converts the field ORP measurement from the YSI ORP probe to give the redox potential that would be obtained using a standard hydrogen electrode for the same measurement, assuming a field temperature of 22ºC.

4.2.2 Groundwater Analytical Results

PFAS were recorded at concentrations exceeding the laboratory LORs in the groundwater samples except the On-Base well MW003 and Off-Base wells MW212 and MW233. The highest PFAS concentrations were detected in the samples collected from the vicinity of the Former Fire Station and the Former Fire Training Area / Monocell area. Consistent with historical results, PFAS at these wells were measured at levels one to two orders of magnitude higher than the rest of the wells.

Groundwater data for the On-Base and Off-Base monitoring locations were compared to adopted recreational guidelines. Groundwater data for the Off-Base monitoring locations were also compared to the adopted drinking water criteria. Groundwater data were not compared to ecological guidelines (i.e., the freshwater and marine water 95% species protection guidelines). Adopted recreational water criteria for PFOS + PFHxS were exceeded in 17 groundwater monitoring well locations, all located On-Base. Four Off-Base groundwater monitoring locations exceeded the drinking water criteria for PFOS + PFHxS (MW220S, MW226, MW232, and MW236S).

PFOA was detected for the first time at MW125I (0.02 µg/L). There were no first-time detections of PFOS or PFOS + PFHxS. The wells that recorded a new historical maximum for selected PFAS compounds are provided in Table 4.2. No new exceedances of the adopted guideline criteria were reported during the current sampling event.

Table 4.2 Locations of new historical maximum concentrations in groundwater

Compound	Location
PFOS	MW124, MW125S

Compound	Location
PFOA	MW105, MW349, MW125I, MW125S
PFOS + PFHxS	MW121, MW124, MW125I, MW125S

A summary of the groundwater analytical results from the current sampling event is presented in Table 2, Appendix B and the historical data record for each of the OMP monitoring wells is presented in Table 7, Appendix B. Groundwater monitoring well locations are provided on Figure 3, Appendix A and distribution of PFOS + PFHxS and PFOA concentrations are presented on Figures 6A and 6B, Appendix A, respectively. Laboratory reports are provided in Appendix C.

4.3 Surface Water

4.3.1 Surface Water Conditions

Surface water conditions encountered during the current sampling round are summarised in Table 4.3 and physico-chemical field data, including site condition data, are presented in Table 3, Appendix B.

Table 4.3 Summary of surface water conditions

Parameter	Details
Access	All surface water sampling locations were accessible. SW110, SW129, SW130, SW113, SW120, SW126, SW128, SW133, and SW136 were dry during the current sampling event and therefore no samples were collected from these locations.
Field Observations	No odours or separate phase product were identified during sampling, except the following: — A slight organic odour was noted at SW203; and — A slight organic sheen was noted at SW121 and SW211. Water was stagnant (e.g., pooled or ponded) at most locations.
Surface water quality	Physico-chemical field water quality parameters measured during the sampling event recorded the following: — Field-measured EC ranged between 215 µS/cm (SW245) and 49,026 µS/cm (SW232) indicating variable conditions from fresh to brackish/saline. The lowest EC was measured in Ross River. — Corrected redox potential measurements[1] ranged between 43.4 mV (SW134) and 323.6 mV (SW243) indicating a range of reducing to oxidising conditions. — Field-measured pH ranged from 6.47 (SW203) to 8.76 (SW119), indicating circumneutral to alkaline conditions. — DO measurements were recorded between the limit of detection (0 mg/L) (SW203) and 6.26 mg/L (SW245), indicating poorly to moderately oxygenated surface water.

[1] – Per YSI (2005), the field redox potential (as mV) was determined by adding a factor to the ORP measurement reported from the YSI 6-series sondes (i.e., field redox potential [mV] = YSI ORP + 200). The equation stated above converts the field ORP measurement from the YSI ORP probe to give the field redox potential that would be obtained using a standard hydrogen electrode for the same measurement, assuming a field temperature of 22ºC.

4.3.2 Surface Water Analytical Results

PFAS were recorded at concentrations exceeding the laboratory LORs at the surface water locations, except SW134, SW227, SW243. and SW244. The highest PFAS concentrations were detected in the On-Base samples collected from the vicinity of the Former Fire Station at concentrations an order of magnitude higher than the other monitoring locations; however, these measurements were consistent with historical results at this location.

Surface water data for the On-Base and Off-Base monitoring locations were compared to adopted recreational guidelines. Surface water data for the Off-Base monitoring locations were also compared to the adopted drinking water criteria and ecological guidelines (i.e., the freshwater and marine water 95% species protection guidelines). The surface water data from the dams on the Base (i.e., SW139, SW140, and SW144) were compared to ecological guidelines. Adopted recreational water criteria for PFOS + PFHxS were exceeded at five On-Base (SW121, SW109, SW139, SW140, and SW132) and one Off-Base (SW203) surface water locations. Surface water collected from four Off-Base locations (SW203, SW220, SW233, and SW242) exceeded the adopted drinking water guidelines. Concentrations of PFOS exceeded the freshwater and marine water 95% species protection value at the three On-Base dam locations (SW139, SW140, SW144) and four Off-Base locations (SW203, SW220, SW233, and SW242).

PFOS was detected for the first time at SW245 (0.03 µg/L), which is the uppermost monitoring location in Ross River (characterised as a reference monitoring location as it lies up-gradient from the Base). There were no first-time detections of PFOA or PFHxS. New exceedances of the adopted guideline criteria during the current sampling event included the following:

- PFOS exceeded the recreational water criteria at SW121;
- PFOS exceeded the freshwater and marine water 95% species protection value at SW144; and
- Sum of PFHxS and PFOS exceeded the recreational water criteria at SW203.

The wells that recorded a new historical maximum concentration for selected PFAS compounds are provided in Table 4.4.

Table 4.4 Locations of new historical maximum concentrations in surface water

Compound	Location
PFOS	SW121, SW109, SW144, SW132, SW203
PFOA	SW121, SW132, SW203
PFOS + PFHxS	SW121, SW109, SW144, SW132, SW203

A summary of the surface water analytical results from the current sampling round is presented in Table 4, Appendix B and the data record for each of the OMP monitoring surface water monitoring locations is presented in Table 8, Appendix B. Surface water sampling locations are provided on Figure 4, Appendix A and distribution of PFOS + PFHxS and PFOA concentrations are presented on Figures 7A and 7B, Appendix A, respectively. Laboratory reports are provided in Appendix C.

4.4 Sediment

4.4.1 Sediment Observations

Sediment conditions observed during the current sampling round are summarised in Table 4.5 and field observations are presented in Table 5, Appendix B.

Table 4.5 Summary of sediment conditions

Parameter	Details
Access	All sediment sampling locations were accessible.
Field Observations	No odours were identified during sampling, except for the following: – An organic odour was noted at SD132 (slight), SD203 (strong), SD212 (moderate), and SD220 (strong).

4.4.2 Sediment Analytical Results

PFAS were recorded at concentrations exceeding the laboratory LORs in most sediment sampling locations, except On-Base locations SD126 and SD134 and Off-Base locations SD243, SD244, and SD245 (which are reference locations located in the Ross River or at the lake in the suburb of Idalia).

PFOA detected for the first time at SD132 (0.0004 mg/kg) and SD242 (0.0003 mg/kg). There were no first-time detections of PFOS or PFOS + PFHxS. The locations that recorded a new historical maximum for selected PFAS compounds are provided in Table 4.6.

Table 4.6 Locations of new historical maximum concentrations in sediment

Compound	Location
PFOS	SD121, SD109, SD132, SD211, SD212
PFOA	SD121, SD109, SD110, SD132
PFOS + PFHxS	SD121, SD109, SD110, SD132, SD203, SD211, SD212

A summary of the sediment analytical results from the current sampling event is presented in Table 6, Appendix B and the data record for each of the OMP monitoring sediment monitoring locations is presented in Table 9, Appendix B. Sediment sampling locations are provided on Figure 4, Appendix A and distribution of PFOS + PFHxS and PFOA concentrations are presented on Figures 8A and 8B, Appendix A, respectively. Laboratory reports are provided in Appendix C.

4.5 Triggers for Action and/or Review

Focus PFAS compounds (i.e., PFOS, PFOA, and PFOS + PFHxS) are detected at most On-Base and Off-Base monitoring locations. Identifying and implementing appropriate triggers is a critical component of Defence's approach to managing risks to receptors from PFAS contamination. The data screening triggers for groundwater and surface water and the associated response actions, including a diagram illustrating the PFAS screening trigger framework, are discussed and presented in Section 7 in the Lavarack Barracks OMP (WSP, 2024), which is currently undergoing Defence review.

A weight of evidence approach for the Management Area based on PFAS concentration, concentration trends, and potential for a change in risk profile at each monitoring location for groundwater and surface water for this sampling event is provided in Tables 10 and 11, Appendix B.

4.5.1 Screening Triggers – Groundwater

Of the 43 groundwater samples analysed, eight On-Base locations screened as indicating an **elevated** potential for change in risk profile. These locations included MW116 (Eastern PFAS Contamination Area), MW105 (Former Fire Station), MW065 and MW121(Lavarack Golf Course & Sporting Field), MW138 (Lavarack Dams), and MW119 and MW125I/S (Base Boundary). The primary basis for this screening was PFAS concentrations measured higher than previous data or measurements exceeding the 85th percentile of previous data, so measured data represented notably higher concentrations

than measured in the period of monitoring (since 2018). Two locations on the eastern Base boundary also indicated visually increasing trends for some PFAS (MW116 and MW119). While this increasing trend along with maximum measured PFAS would have screened the locations as a **high** potential for risk profile change, the relatively low measured concentrations reduced the screening level to **elevated**. MW125S was also reduced to an elevated potential for risk profile change despite PFOS concentrations indicating an increasing concentration trend. The reduced screening level was primarily due to the PFOS concentrations being relatively very low, especially in comparison to the other PFOS concentrations, which were elevated but not increasing. The immediate response action recommendation for these monitoring locations was to verify the results via consideration of the data validation. Further verification of these result will be via continuation of the OMP with the next monitoring event in the 2025 wet season sampling event.

Four groundwater monitoring locations screened as **low** potential for risk profile change. These included MW131 (Former Fire Training Area), MW123S and MW122 (Lavarack Golf Course & Sporting Field), and MW236S (Off-Base). The primary basis of this screening was PFAS measured higher than the 65th percentile of previous data at their locations, so data represented an upper bound relative to the data range over the period of the OMP. The immediate response recommendation for these monitoring locations is to continue monitoring in the 2025 wet season sampling event.

The remaining 29 groundwater monitoring locations reported measured PFAS that screened as **negligible** potential for risk profile change based on concentrations that were consistent with previous measurements or did not indicate increased potential for contamination (noting that groundwater monitoring wells MW019 and MW021 were excluded from the screening as no previous data were available for screening evaluation). The immediate response recommendation for these monitoring locations is to continue monitoring in the 2025 wet season sampling event.

No monitoring locations are recommended for removal from the program at this time.

4.5.2 Screening Triggers – Surface Water

Of the 22 surface water samples analysed, eight locations screened in as indicating an **elevated** potential for change in risk profile. These locations included SW119 and SW121 (Eastern PFAS Contamination Area), SW109 (Former Fire Station), SW139 and SW144 (Upper and Middle Lavarack Dams), SW132 (Base Boundary), and SW203 and SW233 (Off Base). The primary basis for this screening was PFAS concentrations measured higher than previous data or measurements exceeding the 85th percentile of previous data, so measured data represented notably higher concentrations than measured in the period of monitoring (since 2018). Whilst this was a dry season monitoring event, it is noted that one location, SW144, also showed a visually increasing trend over the last three wet season sampling events. While this increasing trend along with maximum measured PFAS would have screened the location as a **high** potential for risk profile change, the relatively low measured concentrations (<0.4 µg/L) reduced the screening level to **elevated**. The elevated risk screening aligned with known On-Base source areas and the downstream predominantly flow through Catchment G and Catchment K before its confluence with Ross River or Gordon Creek, respectively. As many of these surface water monitoring locations were characterised by ponded or pooled water (few locations had visible water flow), which is a reasonable driver of the elevated concentrations through evapo-concentration processes during dry seasonal conditions, the notably higher concentrations may reflect higher concentrations than would be measured under wet (and flowing) conditions. Therefore, the immediate response recommendation for these monitoring was to verify the results via consideration of the data validation. Further verification of these results will be via continuation of the OMP with the next monitoring event in the 2025 wet season sampling event.

Five surface water monitoring locations screened as **low** potential for risk profile change. These included SW140 (Lower Lavarack Dam), SW135 (Base Boundary), and SW205, SW220, and SW242 (Off-Base). The primary basis of this screening was PFAS measured higher than the 65th percentile of previous data at their locations. This risk screening was associated with the Lower Lavarack Dam and the downstream creek tributary (Catchment G) just before its confluence with Ross River and upstream reaches of Gordon Creek between the Base boundary and lakes within Idalia (Catchment K). The immediate response recommendation for these monitoring locations is to continue monitoring in the 2025 wet season sampling event.

The remaining nine surface water monitoring locations, which included the reference Ross River and lakes within Idalia monitoring locations, reported measured PFAS that screened as **negligible** potential for risk profile change. The immediate response recommendation for these monitoring locations is to continue monitoring in the 2025 wet season sampling event and to consider the removal of SW134 (a Base boundary site) and SW244 (a reference Ross River site) that have consistently reported non-detectable PFAS. Further, there is some redundancy with SW244 as there are other reference locations in Ross River (i.e., SW245 and SW227).

4.5.3 Screening Trigger Assessment Summary

Summary screening for the groundwater and surface water data for potential collected from the 2024 dry season sampling event to change the risk profile associated with the monitoring location are presented in Table 4.7 and Table 4.8.

Figures illustrating relevant guideline exceedances and screening trigger assessment outcomes are provided in Figure 9, Appendix A (groundwater) and Figure 10, Appendix A (surface water).

Table 4.7 Groundwater Trigger Screening

Location Code	Trigger Screening Framework																									Risk Characterisation	Immediate Response Actions
	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >95thtile?	Is PFOA >95thtile?	Is the Sum of PFHxS and PFOS >95thtile?	Is the Sum of of PFAS >95thtile?	Is PFOS >65thtile?	Is PFOA >65thtile?	Is the Sum of PFHxS and PFOS >65thtile?	Is the Sum of of PFAS >65thtile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?	Risk Characterisation	Immediate Response Actions
Eastern PFAS Contamination Area																											
MW018	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW112	Yes	No	No	Yes	No	No	No	No	-	No	No	No	No	No	No	No	No	-	-	-	-	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW114	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW115	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW116	Yes	No	No	No	No	No	No	No	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	NR	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring. Note that increasing PFAS concentrations are relatively low so risk response downgraded from high to elevated
MW139	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
Former B Squadron																											
MW135	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	Yes	Yes	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
Former Fire Station																											
MW105	Yes	Yes	No	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	TBV	YBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
MW128	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW345	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	-	-	-	-	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
Former Fire Training Area																											
MW131	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
Former Helicopter Squadron																											
MW102	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
Lavarack Golf Course and Sporting Fields																											
MW065	Yes	Yes	No	Yes	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	NR	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
MW120	Yes	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW121	Yes	No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	No	NR	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
MW122	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
MW123I	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW123S	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
Monocell																											
MW014A	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW072	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW074	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW077	Yes	No	No	No	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Negligible potential for risk profile change	Continue monitoring
MW106	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW349	Yes	Yes	No	Yes	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Negligible potential for risk profile change	Continue monitoring
Stockpile Designated Area 2																											
MW141	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
Top, Middle and Lower Dams																											
MW138	Yes	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No	NR	TBV	NR	NR	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
Base Boundary - On-base																											
MW002	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring

	Trigger Screening Framework																									Risk Characterisation	Immediate Response Actions
	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines **(Sum PFHxS and PFOS)** Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >95th%ile?	Is the Sum of of PFAS >95th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?	Risk Characterisation	Immediate Response Actions
Location Code																											
MW003	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Consider value of retaining this monitoring well
MW118	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW119	Yes	No	No	No	No	No	No	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	NR	TBV	NR	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring. Note that increasing PFAS concentrations are relatively low so risk response downgraded from high to elevated
MW124	Yes	No	No	No	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	Yes	Yes	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW125I	Yes	No	No	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	NR	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
MW125S	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring. Note that the increasing PFOS concentrations are associated with relatively low concetrations so risk response downgraded from high to elevated.
Off-Base																												
MW205S	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW212	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW217	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change (low PFAS)	Continue monitoring
MW220S	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW226	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW232	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW233	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
MW236S	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	Yes	No	Yes	Yes	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring

Notes:
TBV - to be verified. Data validation and site-specific conditions have been considered - Further verification will be via continuation of the OMP
NR - not required. No further action is required at the moment.
Conditional formatting of PFAS concentrations for visual trend analysis limited to the wet season. Conditional formatting not used when PFAS measured below LOR.
Data measured below detection (<LOR) reported as a concentration equal to the LOR (and shaded in grey).
Data comparison to guidelines is location dependent: On-Base data compared only to recreational (e.g., body contact) guidelines, and Off-Base data compared to drinking water and recreational guidelines.

Table 4.8 Surface Water Trigger Screening

Location Code	Trigger Screening Framework																									Risk Characterisation	Immediate Response Actions
	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines **(Sum PFHxS and PFOS)** Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?	Risk Characterisation	Immediate Response Actions
Eastern PFAS Contamination Area																											
SW119	Yes	No	No	No	No	No	No	No	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No	NR	TBV	TBV	NR	Elevated potential for risk profile change	Verify high PFAS results and continue monitoring
SW121	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
Former Fire Station																											
SW109	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	Yes	No	No	No	No	TBV	NR	TBV	NR	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
SW110	Dry																										
Lavarack Golf Course and Sporting Fields																											
SW129	Dry																										
SW130	Dry																										
Top, Middle and Lower Dams																											
SW139	Yes	Yes	No	Yes	No	No	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
SW140	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	NR	NR	NR	TBV	Low potential for risk profile change	Verify elevated PFAS data and continue monitoring
SW144	Yes	Yes	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	TBV	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring. Note that PFAS concentrations are relatively low so risk response downgraded to elevated. Continue monitoring
Remaining on-Base																											
SW113	Dry																										
SW120	Dry																										
Base Boundary - On-base																											
SW126	Dry																										
SW128	Dry																										
SW132	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
SW133	Dry																										
SW134	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Consider removal from OMP
SW135	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	Yes	Yes	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
SW136	Dry																										
Off-Base																											
SW203	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data, continue monitoring
SW205	Yes	No	No	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No	Yes	Yes	No	No	No	No	TBV	NR	NR	NR	Low potential for risk profile change	Continue monitoring
SW211	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
SW212	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
SW217	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
SW220	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	NR	NR	NR	NR		
SW227	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Reference Location - No linkage to Base	Continue monitoring
SW232	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring

	Trigger Screening Framework																									Risk Characterisation	Immediate Response Actions
	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines **(Sum PFHxS and PFOS)** Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?	Risk Characterisation	Immediate Response Actions
SW233	Yes	Yes	No	No	No	No	No	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring in wet season
SW242	Yes	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
SW243	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Reference Location - No linkage to Base	Continue Monitoring
SW244	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Reference Location - No linkage to Base	Consider removal from OMP
SW245	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	NR	NR	NR	NR	Reference Location - No linkage to Base	Continue monitoring

Notes:
Dry - Location was dry during the current sampling event
TBV - to be verified. Data validation and site-specific conditions have been considered - Further verification will be via continuation of the OMP
NR - not required. No further action is required at the moment.
Conditional formatting of PFAS concentrations for visual trend analysis limited to the wet season. Conditional formatting not used when PFAS measured below LOR.
Data measured below detection (<LOR) reported as a concentration equal to the LOR (and shaded in grey).
Data comparison to guidelines is location dependent: On-Base data compared only to recreational (e.g., body contact) guidelines with dam results compared to ecological guidelines, and Off-Base data compared to recreational, drinking water, and ecological guidelines.

4.6 Quality Assurance and Quality Control

The evaluation of the Quality Assurance and Quality Control (QA/QC) results is presented in the QA/QC report provided in Appendix D. This report was prepared with reference to the data validation sheets (prepared for each sample batch), also presented in Appendix D. Based on the results of this QA/QC evaluation, the analytical data presented in this Report are considered of sufficient quality to meet the objectives of this sampling event and to allow for analysis and interpretation of the data for the purposes of their assessment.

5 Sampling Event Summary

Based on the observations, field measurements and data collected from the sampling event completed at the Lavarack Barracks Management Area during October 2024, the following summary is provided:

- The OMP for the dry season was completed in October 2024. The sampling event included data sample collection from 43 groundwater monitoring wells, 22 surface water locations and 31 sediment sampling locations. All sampling locations were accessible during the current sampling event, except MW111B, which could not be located during the current investigation. Surface water samples were not collected at SW110, SW129, SW130, SW113, SW120, SW126, SW128, SW133, and SW136 because these locations were dry.
- Groundwater elevation in the shallow aquifer ranged between 0.99 mAHD (MW205S) and 24.97 mAHD (MA141). Groundwater elevation in the deeper aquifer ranged between 7.49 mAHD (MW115) and 18.48 mAHD (MW106). The groundwater flow direction within the shallow aquifer was inferred to be to the north towards the Ross River, consistent with previous assessments.
- PFAS were recorded at concentrations exceeding the laboratory LORs in the samples except:
  - the On-Base groundwater well MW003 and Off-Base wells MW212 and MW233
  - On-Base surface water location SW134, and Off Base locations SW227, SW243, and SW244.
  - On-Base sediment locations SD126 and SD134, and Off-Base locations SD243, SD244, and SD245.
- The highest PFAS concentrations were detected in:
  - Groundwater samples collected from the vicinity of the Former Fire Station and the Former Fire Training / Monocell area, measured at concentrations one to two orders of magnitude higher than other wells sampled during this sampling event.
  - Surface water samples collected from the vicinity of the Former Fire Station, at concentrations an order of magnitude higher than the other monitoring locations.
- Relevant adopted guideline exceedances were noted in the following:
  - Groundwater
    - Adopted recreational water criteria for PFOS + PFHxS were exceeded in 17 groundwater monitoring well locations, all located On-Base.
    - Four Off-Base groundwater monitoring locations exceeded the drinking water criteria for PFOS + PFHxS (MW220S, MW226, MW232, and MW236S).
  - Surface Water
    - Adopted recreational water criteria for PFOS + PFHxS were exceeded at five On-Base (SW121, SW109, SW139, SW140, and SW132) and one Off-Base (SW203) surface water locations.
    - Surface water collected from four Off-Base locations (SW203, SW220, SW233, and SW242) exceeded the adopted drinking water guidelines.
    - Concentrations of PFOS exceeded the freshwater and marine water 95% species protection value at the three On-Base dam locations (SW139, SW140, SW144) and four Off-Base locations (SW203, SW220, SW233, and SW242).
- First-time detections of PFOS, PFOA, or PFOS + PFHxS were noted for:
  - PFOA at MW125I (0.02 µg/L).
  - PFOS at SW245 (0.03 µg/L).

- PFOA at SD132 (0.0004 mg/kg) and SD242 (0.0003 mg/kg).

- New exceedances of the adopted guideline criteria were reported during the current sampling event were limited to surface water at the following monitoring locations:
  - PFOS exceeded the recreational water criteria at SW121;
  - PFOS exceeded the freshwater and marine water 95% species protection value at SW144; and
  - PFHxS and PFOS exceeded the recreational water criteria at SW203.

The following assessment outcomes and responses actions resulted from the screening assessment for groundwater and surface water:

- For groundwater:
  - No groundwater monitoring locations screened as indicating a **high** potential for change in risk profile
  - Eight On-Base locations screened as indicating an **elevated** potential for change in risk profile (i.e., MW116, MW105, MW065, MW121, MW138, MW119, and MW125I/S. The immediate response action recommendation for these monitoring locations was to verify the results via consideration of the data validation. Further verification of these result will be via continuation of the OMP with the next monitoring event in the 2025 wet season sampling event.
  - Four groundwater monitoring locations screened as **low** potential for risk profile change (i.e., MW131, MW123S, MW122, and MW236S. The immediate response recommendation for these monitoring locations is to continue monitoring in the 2025 wet season sampling event.
  - 29 groundwater monitoring locations screened as **negligible** potential for risk profile change. The immediate response recommendation for these monitoring locations is to continue monitoring in the 2025 wet season sampling event.
  - No monitoring locations are recommended for removal from the program at this time.
- For surface water:
  - No surface water monitoring locations screened as indicating a **high** potential for change in risk profile
  - Eight locations screened as indicating an **elevated** potential for change in risk profile (i.e., SW119, SW121, SW109, SW139, SW144, SW132, SW203, and SW233. The immediate response recommendation for these monitoring was to verify the results via consideration of the data validation. Further verification of these results will be via continuation of the OMP with the next monitoring event in the 2025 wet season sampling event.
  - Five surface water monitoring locations screened as **low** potential for risk profile change (i.e., SW140, SW135, SW205, SW220, and SW242. The immediate response recommendation for these monitoring locations is to continue monitoring in the 2025 wet season sampling event.
  - The remaining nine surface water monitoring locations, which included the reference Ross River and lakes within Idalia monitoring locations, screened as **negligible** potential for risk profile change. The immediate response recommendation for these monitoring locations is to continue monitoring in the 2025 wet season sampling event and to consider the removal of SW134 (a Base boundary site) and SW244 (a reference Ross River site) that have consistently reported non-detectable PFAS. Further, there is a redundancy with SW244 as there are other reference locations in Ross River (i.e., SW245 and SW227).

6 Recommendations

Based on the findings of the sampling event completed during October 2024, WSP recommends the following:

- The next sampling event in accordance with the requirement of the PMAP (Department of Defense, 2020) and as described in the OMP be completed in March 2025.
- No monitoring locations are recommended for removal from the program at this time. However:
  - An alternate location for groundwater monitoring well MW111B be identified and/or developed for use in the OMP.
  - The groundwater monitoring well MW235S be investigated and/or unblocked to permit sampling in future sampling events.
- Surface water monitoring locations SW134 (a Base boundary site) and SW244 (a reference Ross River site) be removed as they have consistently reported non-detectable PFAS. Further, SW244 is one of three upstream reference monitoring locations in Ross River (along with SW245 and SW227).

Bibliography

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- AECOM 2023b, *Dry Season Sampling Factual Report, August 2023, PFAS OMP – Lavarack Barracks Townsville*
- Australian and New Zealand Governments (ANZG) 2018, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.
- Defence Contamination Management Manual Annex L Guidance on Data Management 2018 (amended June 2021).
- Defence Environmental Policy.
- Defence Environmental Strategy 2016-2036.
- Defence Estate Strategy 2016-2036.
- Defence Guidance – Ongoing Monitoring Program Reporting 2024.
- Defence Guidance – PMAP & OMP Revision Process 2024.
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- Standards Australia 1998c, *Water Quality—Sampling. Part 11: Guidance on sampling of groundwaters (AS/NZS 5667.11:1998)*.
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- YSI Environmental 2005 *Measuring ORP on YSI 6-Series Sondes: Tips, Cautions and Limitations*. Available at: *https://www.ysi.com/file%20library/documents/technical%20notes/t608-measuring-orp-on-ysi-6-series-sondes-tips-cautions-and-limitations.pdf*.

Appendix A

Figures

KEY MAP

LEGEND

- Management Area
- Lavarack Barracks Base Boundary
- Watercourse

0 1,000 2,000 3,000 4,000 5,000

1:75,000 METRES

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)
1. AERIAL IMAGERY AND KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
2. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
SITE LOCALITY

CONSULTANT

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	107-R	B	1

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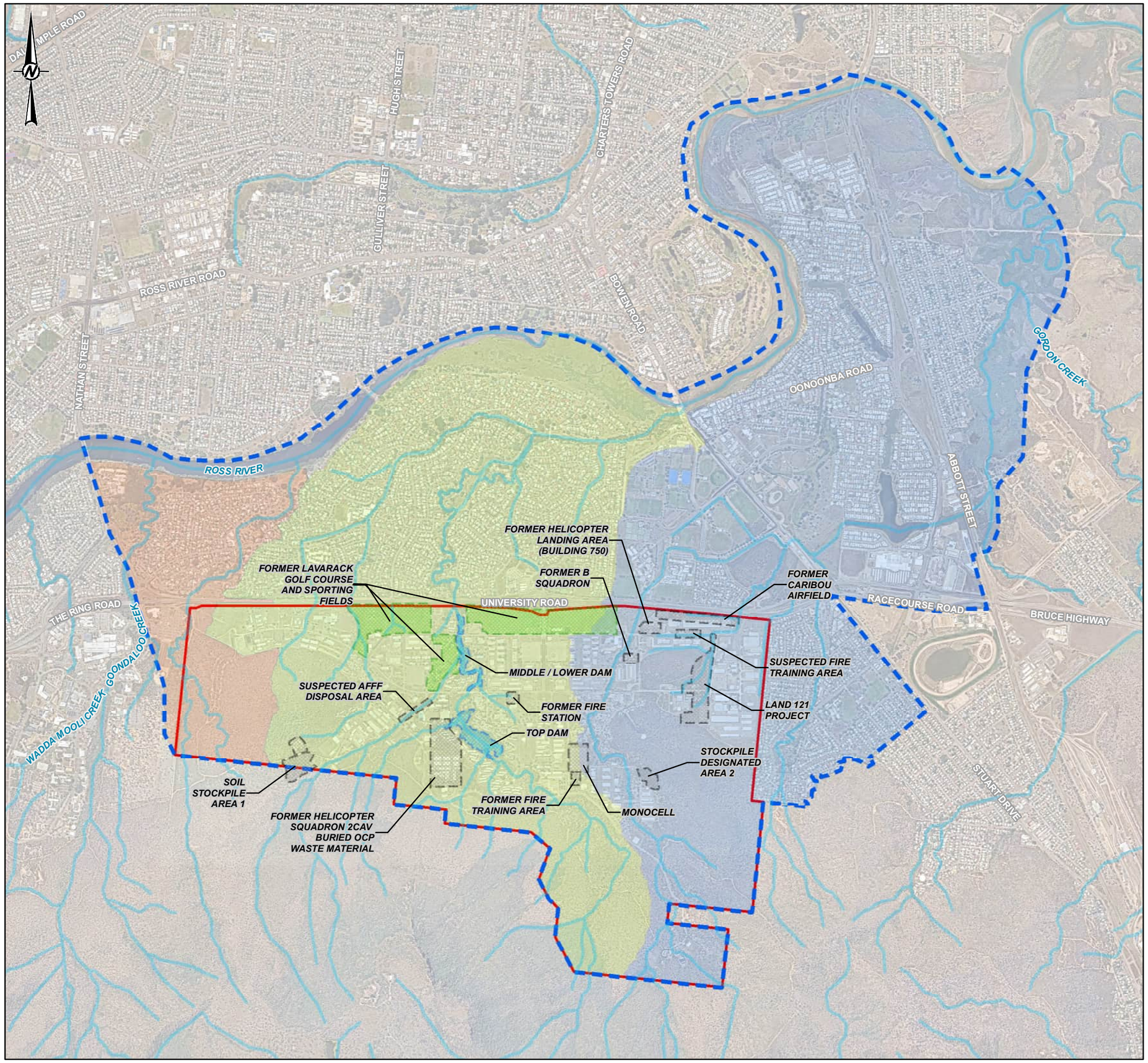

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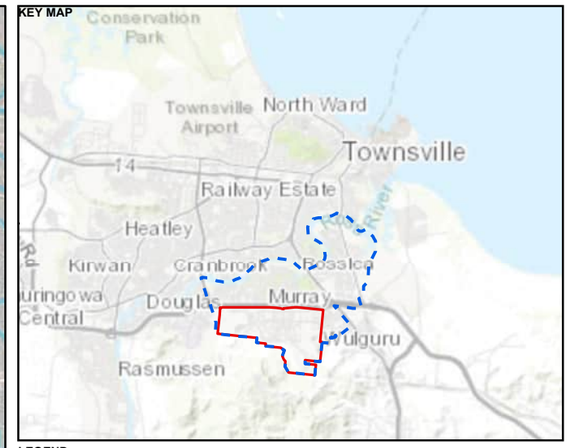

LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
MANAGEMENT AREA

CONSULTANT
wsp

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
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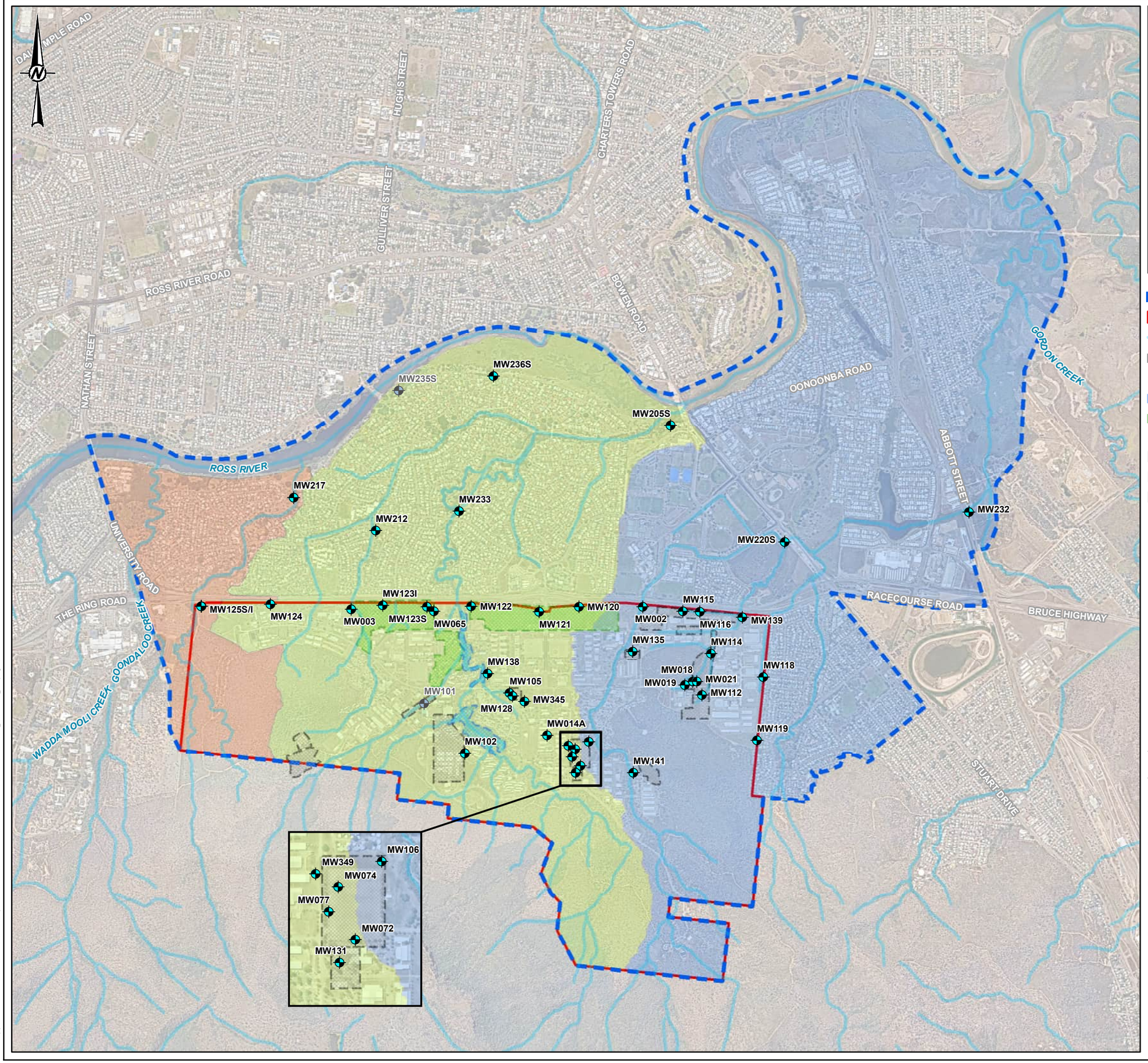
© THIS MEASUREMENT DOES NOT MEET STANDARDS AS SHOWN. THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A1



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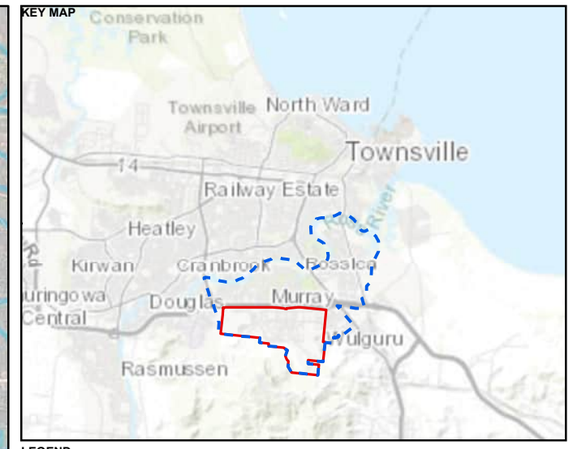

LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- Groundwater Sampling Location
- Groundwater Well Dry - Not Sampled This Round

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. MW226 LOCATED ON PRIVATE PROPERTY AND IS NOT DISPLAYED

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
OCTOBER 2024 GROUNDWATER SAMPLING LOCATIONS

CONSULTANT

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	107-R	B	3

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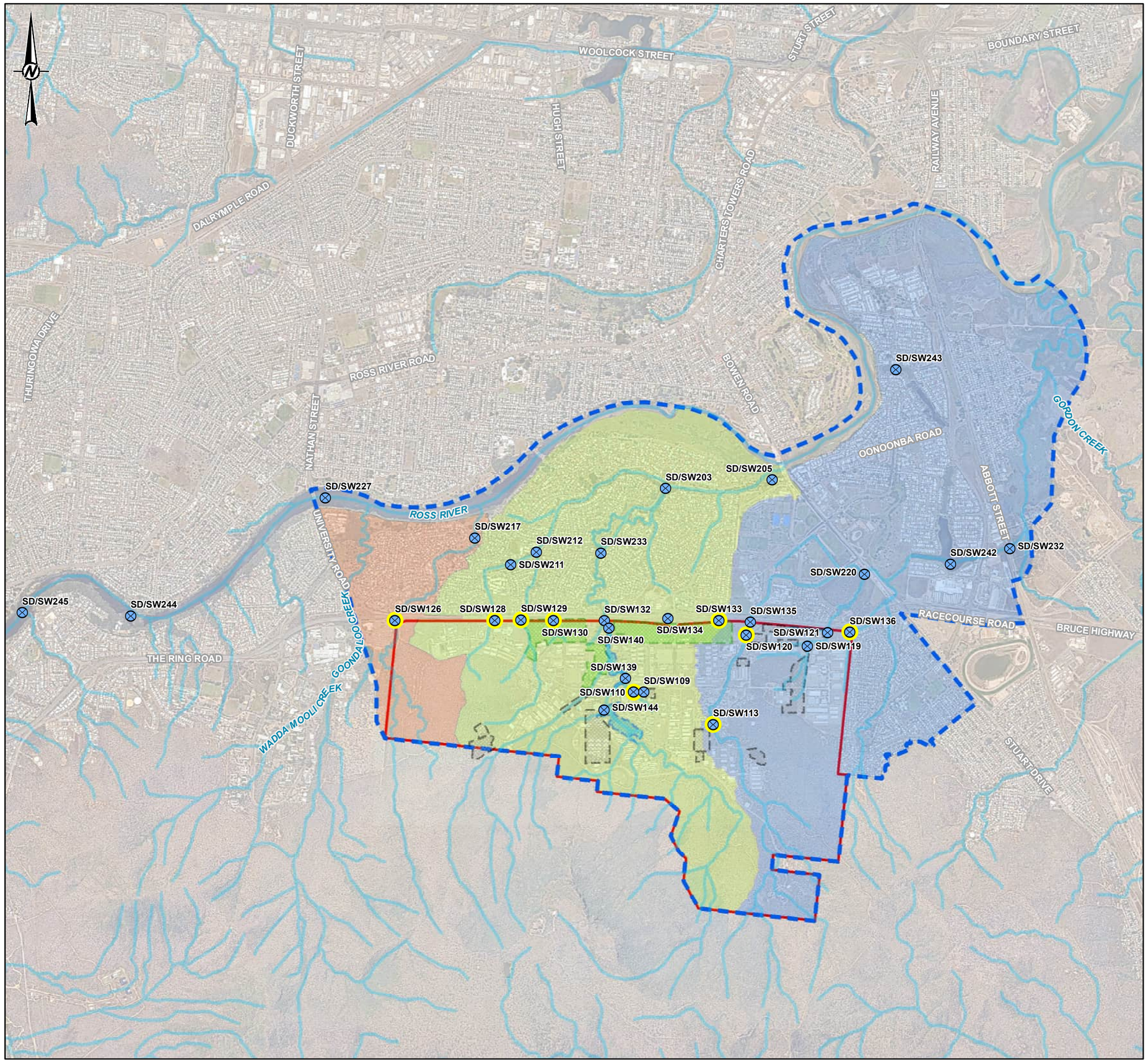

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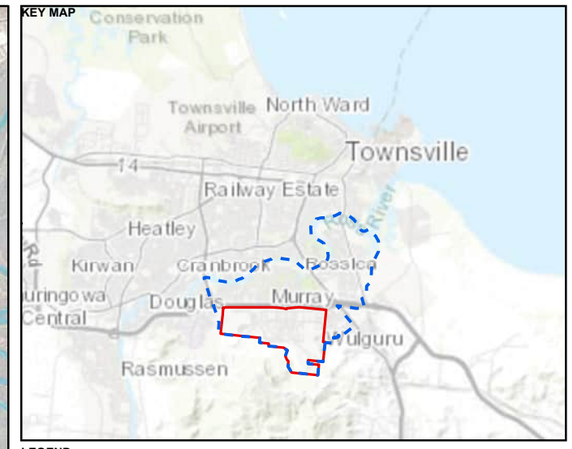

LEGEND

- Management Area
- Base Boundary
- Watercourse

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- Co-located Surface Water and Sediment Sampling Location
- Location Dry - Sampled for Sediment Only

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
OCTOBER 2024 SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS

CONSULTANT

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
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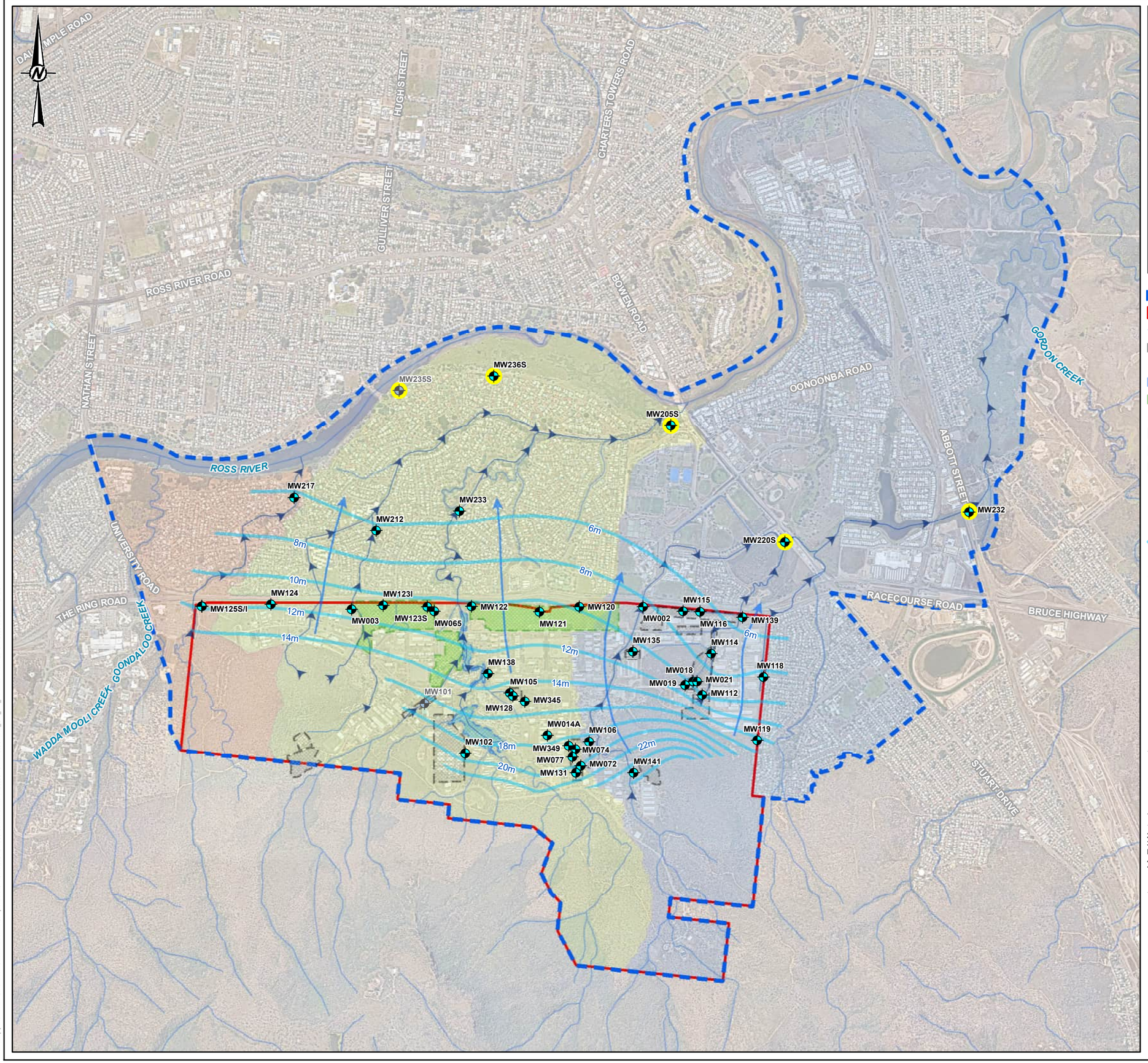

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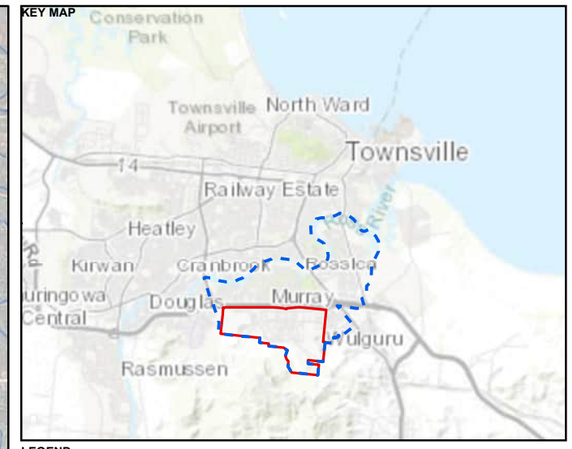

LEGEND

- Management Area
- Base Boundary
- Watercourse
- Source Area

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- October 2024 Gauging Location
- Groundwater Well Dry
- Tidally Influenced Location
- Groundwater Elevation Contour (m AHD)
- Inferred Groundwater Flow Direction
- Surface Water Flow Direction

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. MW226 LOCATED ON PRIVATE PROPERTY AND IS NOT DISPLAYED.
3. ONLY WELLS THAT ARE NOT TIDALLY INFLUENCED WERE USED TO CALCULATE GROUNDWATER ELEVATION. IN ADDITION, MONITORING WELLS MW019, MW077, MW226, MW139, AND MW014A WERE REMOVED FROM CALCULATIONS AS WATER LEVELS WERE RECORDED POST-SAMPLING.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
OCTOBER 2024 SHALLOW GROUNDWATER ELEVATION CONTOURS AND FLOW DIRECTION

CONSULTANT
wsp

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
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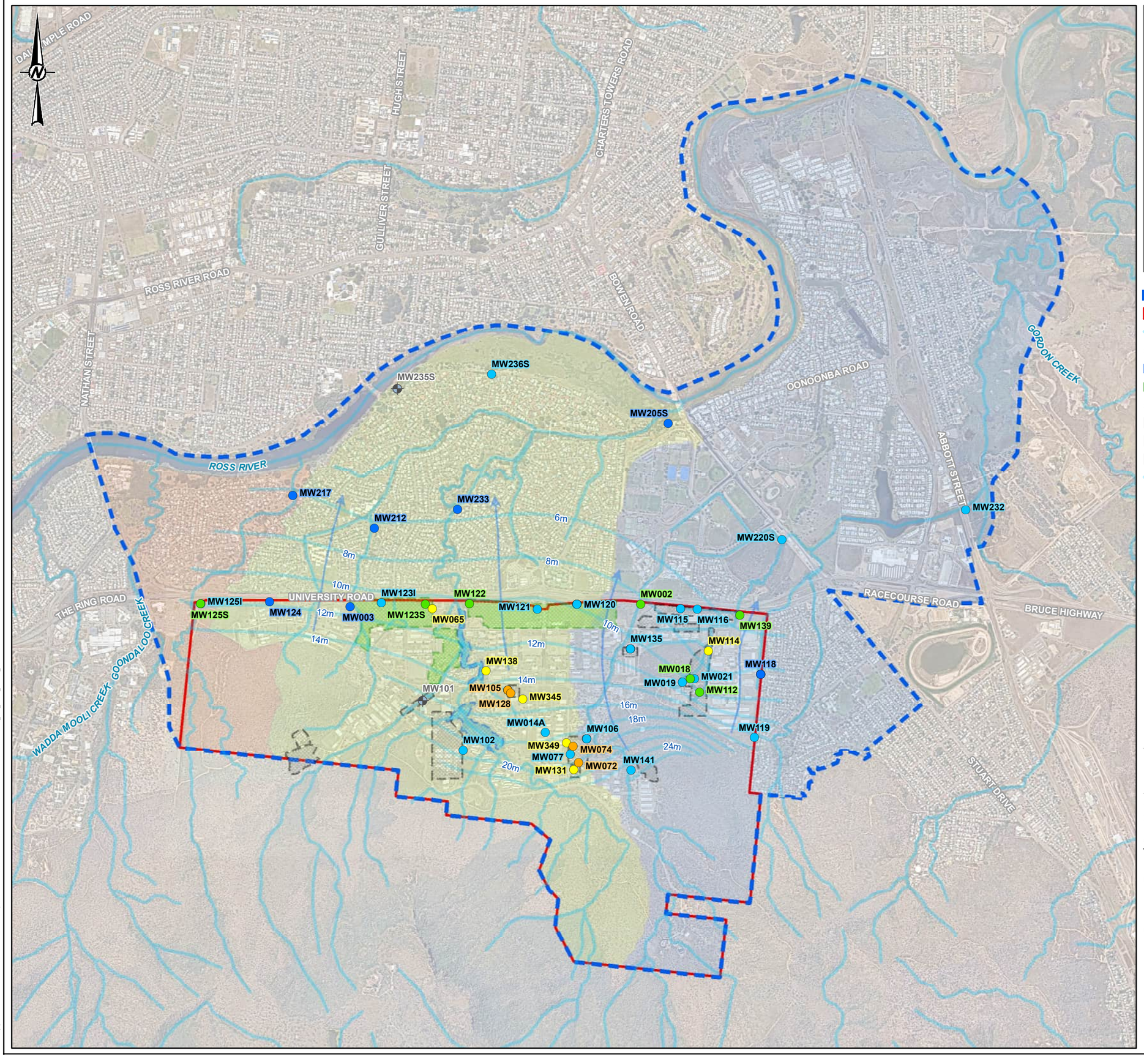

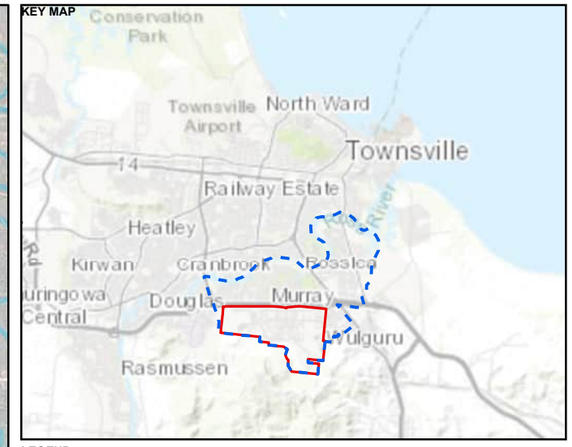

LEGEND

- Management Area
- Base Boundary
- Watercourse

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- October 2024 Shallow Groundwater Elevation Contour (m AHD)
- Inferred Groundwater Flow Direction

October 2024 Groundwater PFOS + PFHxS Result (ug/L)

- <0.07
- 0.07 - 2
- 2 - 10
- 10 - 50
- >50
- Groundwater Well Dry - Not Sampled This Round

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. THE MAXIMUM OF PRIMARY AND DUPLICATE RESULTS ARE DISPLAYED. REFER TO REPORT TABLES FOR THE FULL DATASET.
3. MW226 LOCATED ON PRIVATE PROPERTY AND IS NOT DISPLAYED

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
OCTOBER 2024 GROUNDWATER PFOS + PFHxS RESULTS

CONSULTANT

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	107-R	B	6A

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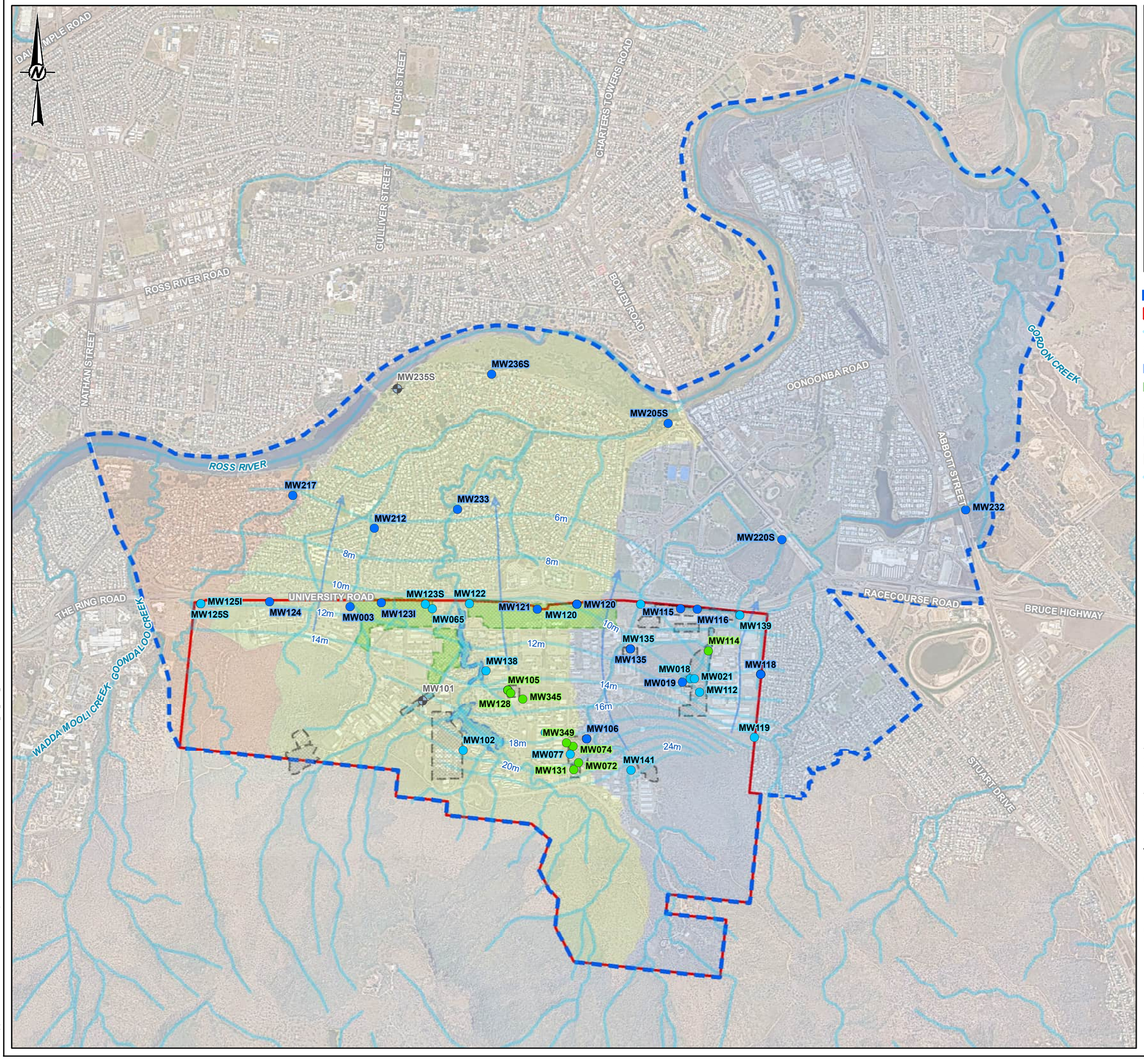

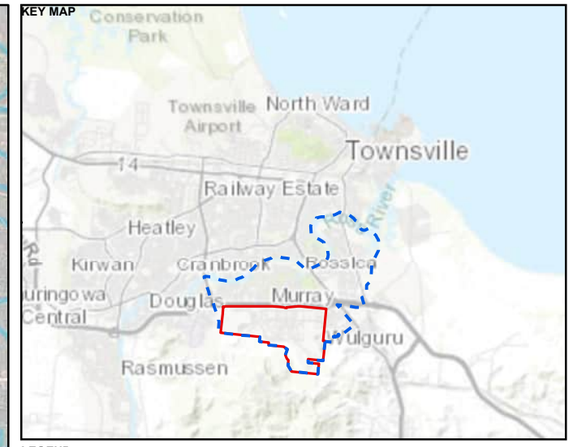

LEGEND

- Management Area
- Base Boundary
- Watercourse

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- October 2024 Shallow Groundwater Elevation Contour (m AHD)
- Inferred Groundwater Flow Direction

October 2024 Groundwater PFOA Result (ug/L)

- <LOR
- LOR - 0.56
- 0.56 - 10
- 10 - 50
- >50
- Groundwater Well Dry - Not Sampled This Round

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. THE MAXIMUM OF PRIMARY AND DUPLICATE RESULTS ARE DISPLAYED. REFER TO REPORT TABLES FOR THE FULL DATASET.
3. MW226 LOCATED ON PRIVATE PROPERTY AND IS NOT DISPLAYED

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
OCTOBER 2024 GROUNDWATER PFOA RESULTS

CONSULTANT
wsp

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	107-R	B	6B

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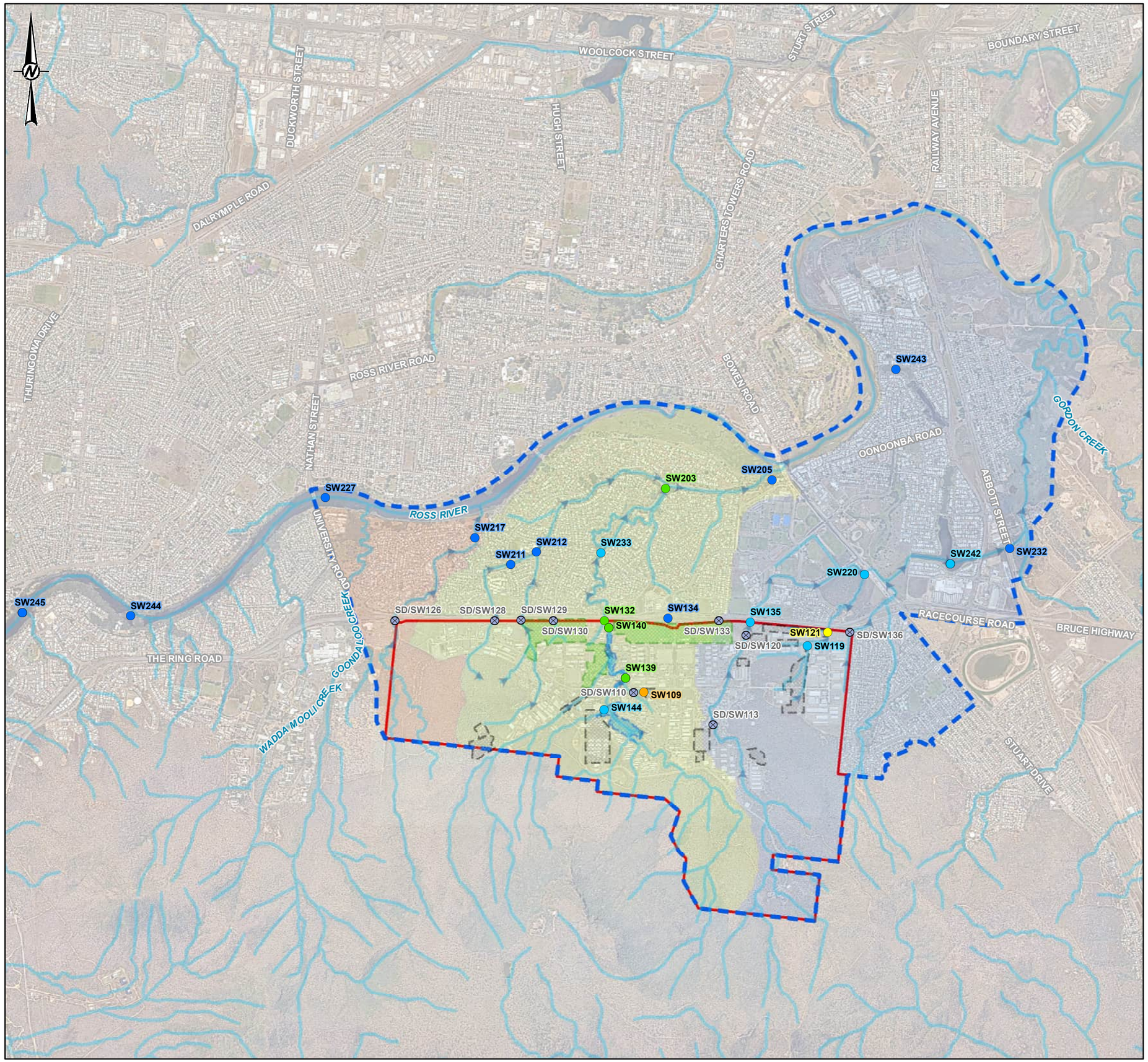

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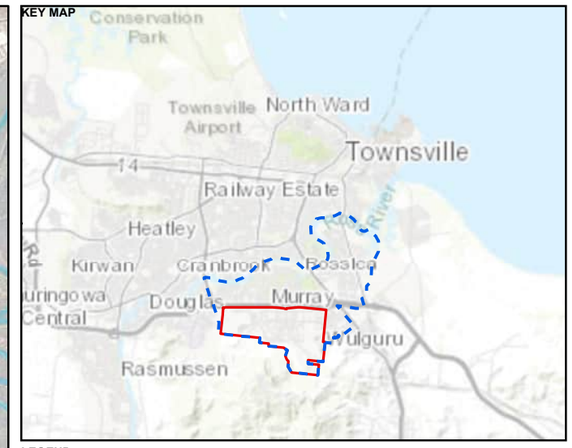

LEGEND

- Management Area
- Base Boundary
- Watercourse

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- Surface Water Flow Direction

October 2024 Surface Water PFOS + PFHxS Result (ug/L)

- <0.07
- 0.07 - 2
- 2 - 10
- 10 - 50
- >50
- Location Dry - Sampled for Sediment Only

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. THE MAXIMUM OF PRIMARY AND DUPLICATE RESULTS ARE DISPLAYED. REFER TO REPORT TABLES FOR THE FULL DATASET.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
OCTOBER 2024 SURFACE WATER PFOS + PFHxS RESULTS

CONSULTANT

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	107-R	B	7A

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3

25mm

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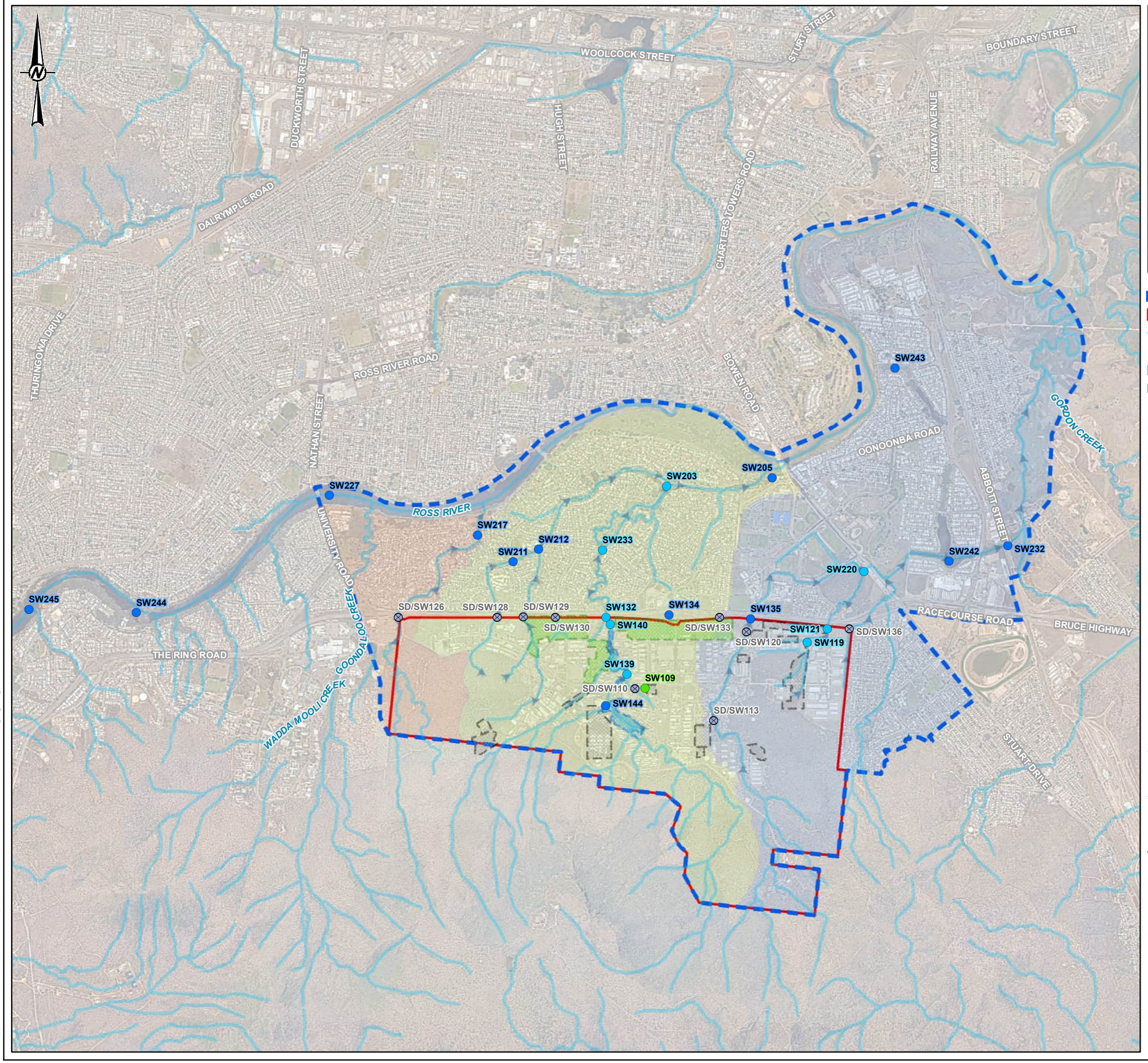
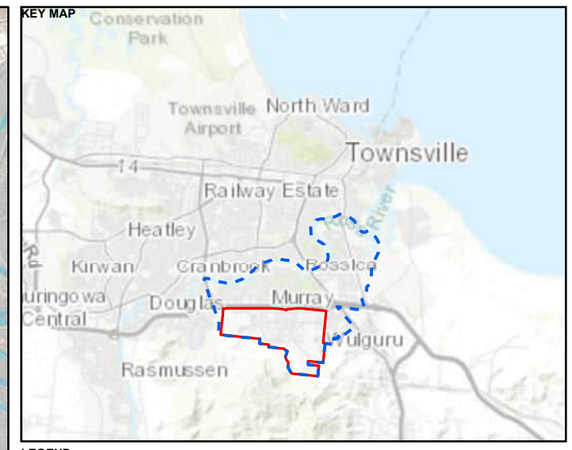
PATH: \\corp.pbwan.net\ANZ\Townsville\Golder\Melbourne\Complex\Data\GIS\Jobs\2022\21455048\Mxd\107-RPS129286-107-R-Fi0007A-Rev8_SW_PFOS_PFHxS_Results.mxd PRINTED ON: 2025-02-26 AT 2:08:01 PM





LEGEND

- Management Area
- Base Boundary
- Watercourse

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- Surface Water Flow Direction

October 2024 Surface Water PFOA Result (ug/L)

- <LOR
- LOR - 0.56
- 0.56 - 10
- 10 - 50
- >50
- Location Dry - Sampled for Sediment Only

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. THE MAXIMUM OF PRIMARY AND DUPLICATE RESULTS ARE DISPLAYED. REFER TO REPORT TABLES FOR THE FULL DATASET.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
OCTOBER 2024 SURFACE WATER PFOA RESULTS

CONSULTANT

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	107-R	B	7B

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25mm
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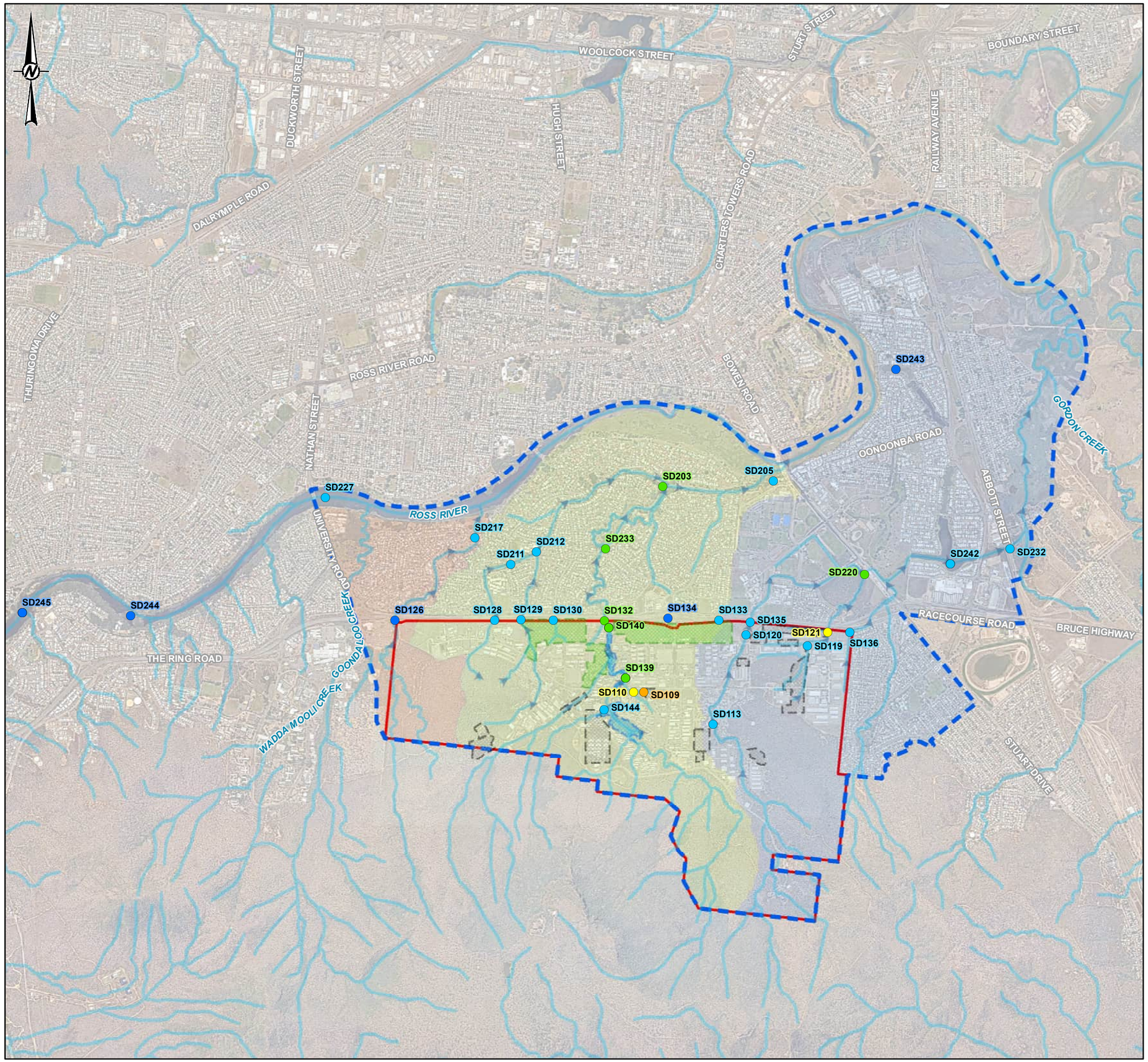

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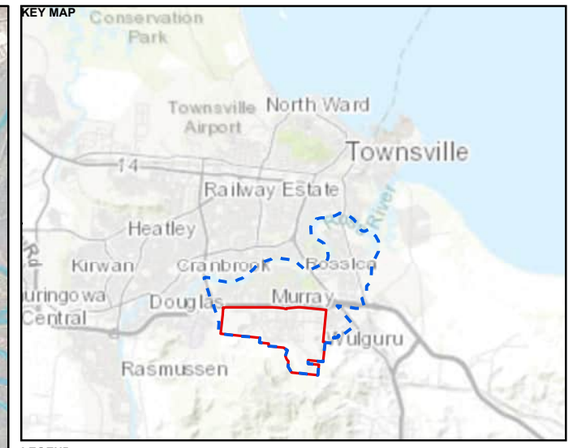

LEGEND

- Management Area
- Base Boundary
- Watercourse

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- Surface Water Flow Direction

October 2024 Sediment PFOS + PFHxS Result (mg/kg)

- <LOR
- >LOR - 0.01
- 0.01 - 0.1
- 0.1 - 1
- >1

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. THE MAXIMUM OF PRIMARY AND DUPLICATE RESULTS ARE DISPLAYED. REFER TO REPORT TABLES FOR THE FULL DATASET.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
OCTOBER 2024 SEDIMENT PFOS + PFHxS RESULTS

CONSULTANT

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	107-R	B	8A

PATH: \\corp.pbwan.net\ANZ\Townsville\Projects\Golder\Melbourne\Complex\Data\GIS\Jobs\2022\12\45\5048\Mxd\107-RPS129286-107-R-F0008A-RevB_SD_PFOS_PFHxS_Results.mxd PRINTED ON: 2025-02-26 AT 2:08:43 PM
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25mm
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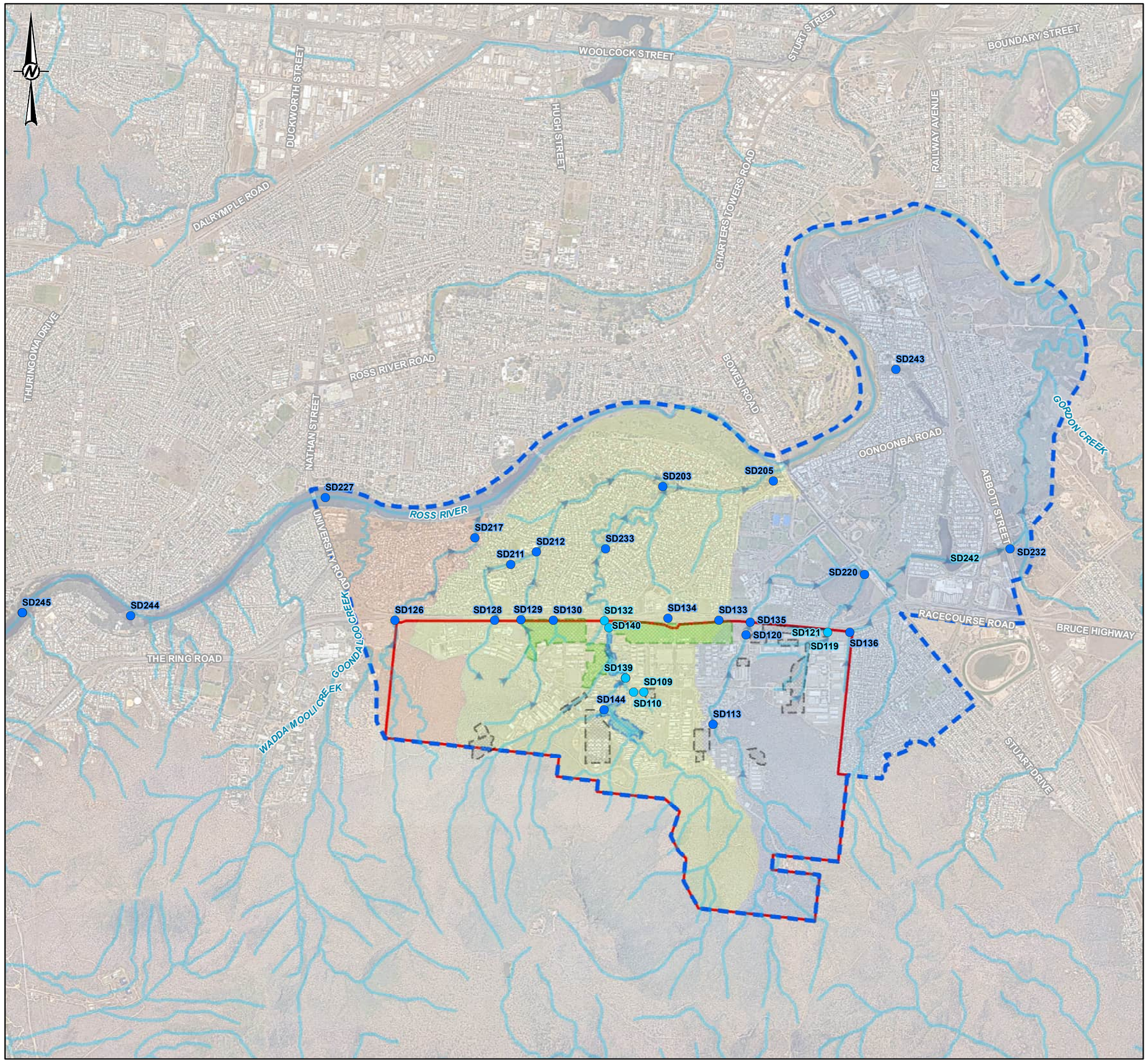

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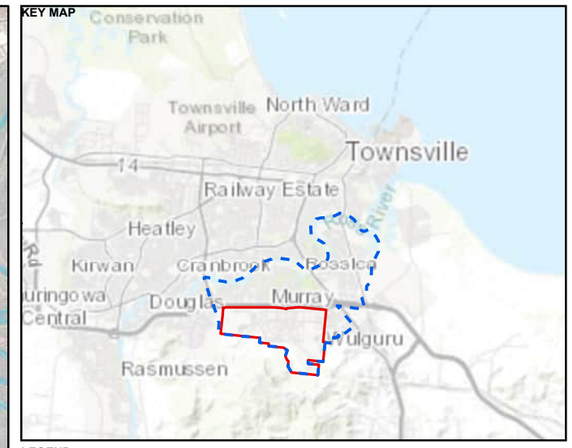

LEGEND

- Management Area
- Base Boundary
- Watercourse

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- Surface Water Flow Direction

October 2024 Sediment PFOA Result (mg/kg)

- <LOR
- LOR - 0.3
- 0.3 - 1
- 1 - 10
- >10

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)

1. PROJECTION: GDA 1994 MGA ZONE 55.
2. THE MAXIMUM OF PRIMARY AND DUPLICATE RESULTS ARE DISPLAYED. REFER TO REPORT TABLES FOR THE FULL DATASET.

REFERENCE(S)

1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
OCTOBER 2024 SEDIMENT PFOA RESULTS

CONSULTANT

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	107-R	B	8B

PATH: \\corp.pbwan.net\ANZ\Townsville\Golder\Melbourne\Compile\Data\GIS\Jobs\2021\21465048\Mxd\107-RPS129286-107-R-F0008B-RevB_SD_PFOA_Results.mxd PRINTED ON: 2025-02-26 AT 2:13:56 PM

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25mm
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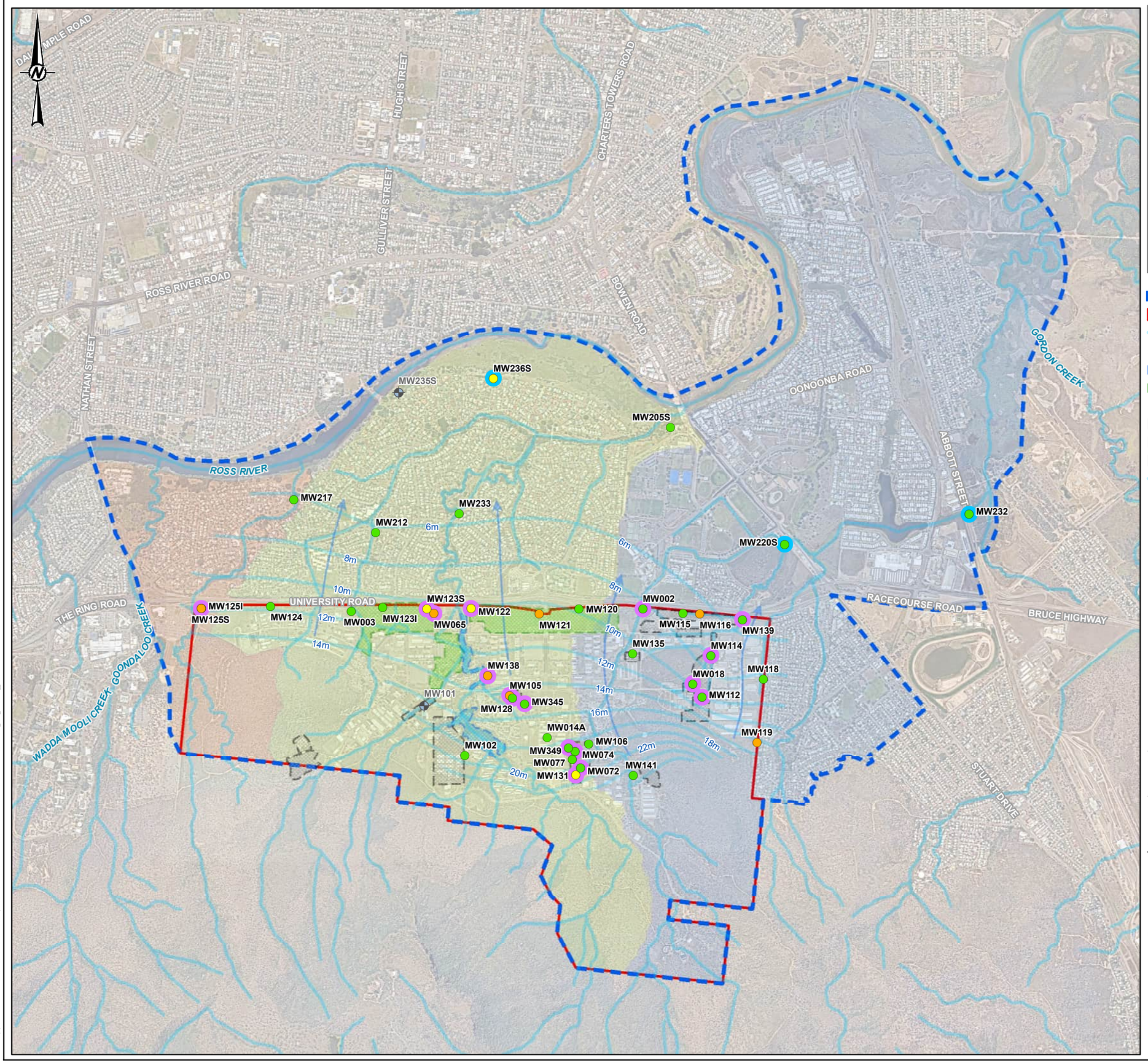

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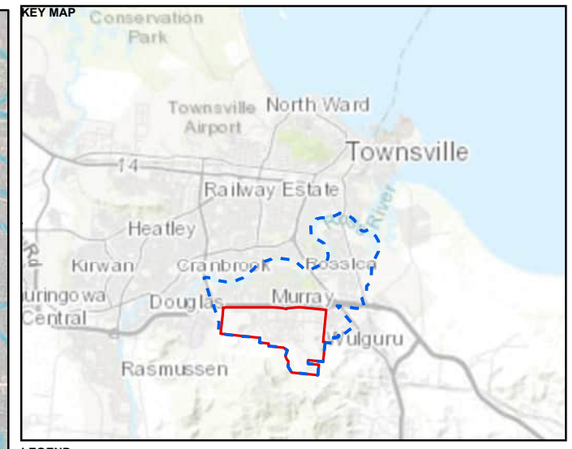

LEGEND

- Management Area
- Base Boundary
- Watercourse

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East
- October 2024 Shallow Groundwater Elevation Contour (m AHD)
- Inferred Groundwater Flow Direction

October 2024 Groundwater Risk Classification

- Negligible potential for risk profile change
- Low potential for risk profile change
- Elevated potential for risk profile change

Relevant Guideline Exceedances

- Groundwater Result Exceeds PFAS NEMP 2.0 2020 Recreational Water
- Groundwater Result Exceeds PFAS NEMP 2.0 2020 Drinking Water (Offsite Only)

0 500 1,000 1,500 2,000

1:27,500 METRES

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55.
3. MW226 LOCATED ON PRIVATE PROPERTY AND IS NOT DISPLAYED

REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
OCTOBER 2024 GROUNDWATER RISK CHARACTERISATION

CONSULTANT
wsp

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	107-R	B	9

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3

0 25mm

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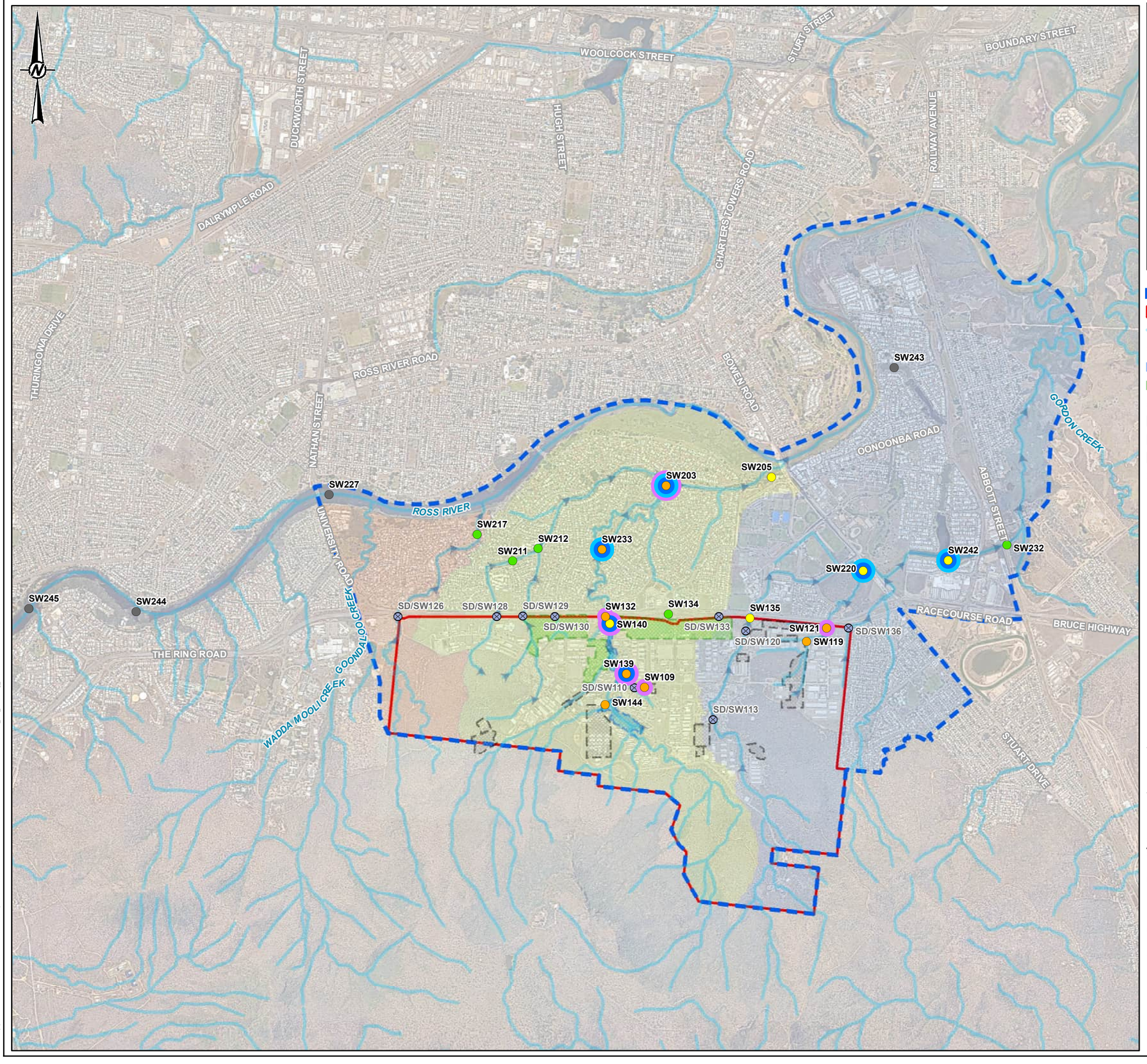

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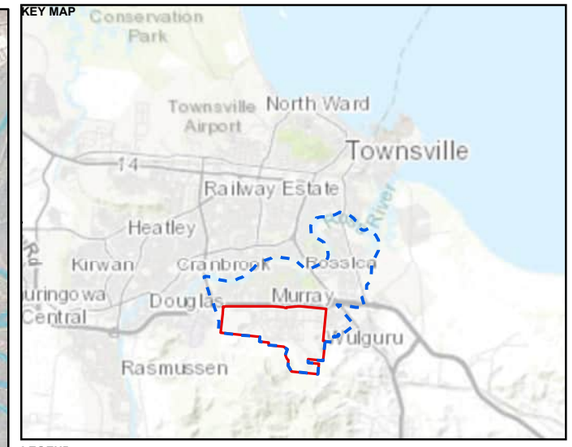

LEGEND

- Management Area
- Base Boundary
- Watercourse

Secondary Source Areas

- Dam
- Outdoor Recreation Area

Approximate Sub-Catchments

- West
- Central
- East

October 2024 Surface Water Risk Classification

- Negligible potential for risk profile change
- Elevated potential for risk profile change
- Low potential for risk profile change
- Reference Location - No linkage to Base

Relevant Guideline Exceedances

- Surface Water Result Exceeds PFAS NEMP 2.0 2020 Recreational Water
- Surface Water Result Exceeds PFAS NEMP 2.0 2020 Drinking Water (Offsite Only)
- Surface Water Result Exceeds PFAS NEMP 2.0 2020 95% Eco Marine Water (Offsite and Dams Only)
- Location Dry - Sampled for Sediment Only

0 500 1,000 1,500 2,000 2,500

1:35,000 METRES

NOTE(S)
1. PROJECTION: GDA 1994 MGA ZONE 55.

REFERENCE(S)
1. AERIAL IMAGERY SOURCED FROM NEARMAP.COM. DATE OF CAPTURE 01/10/2024.
2. KEY MAP SOURCED FROM ESRI ONLINE BASEMAPS.
3. SUB-CATCHMENTS AMENDED AFTER AECOM ONGOING MONITORING INTERPRETIVE REPORT FIGURE F2 DATED 15/08/2023.
4. STATE REFERENCE DATA SOURCED FROM DATA.QLD.GOV.AU.

CLIENT
DEPARTMENT OF DEFENCE

PROJECT
LAVARACK BARRACKS ONGOING MONITORING PROGRAM

TITLE
OCTOBER 2024 SURFACE WATER RISK CHARACTERISATION

CONSULTANT
wsp

YYYY-MM-DD	2025-02-26
DESIGNED	-
PREPARED	MAH
REVIEWED	JF
APPROVED	AH

PROJECT NO.	CONTROL	REV.	FIGURE
PS129286	107-R	B	10

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3

25mm

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Appendix B

Tables

Table 1
Groundwater Gauging and Water Quality Parameters
Dry Season OMP - October 2024
Lavarack Barracks

Location Code	HydraSleeve™ Installation Date	Sample Date	Well Screen Depths (mbtoc)	Well Depth (mbtoc)	Depth to Water (mbtoc)	Aquifer	Hydrasleeve™ Installation Depth (mbtoc)	TOC elevation (mAHD)	Groundwater Elevation (mAHD)	Condition of Well	DO (mg/L)	EC (µS/cm)	pH	Redox (mV)	Corrected Redox Potential* (mV)	Temperature (°C)	Turbidity	Water Colour	Odour	Sheen	Comments
Eastern PFAS Contamination Area																					
MW021	14/10/2024	17/10/2024	-	12.00	2.78	-	11.00	12.23	9.45	Good	0.86	19598	7.3	-52.4	147.6	29.6	low	clear	mild hydrocarbon odour	slight sheen	gloves had HC odour, sheen on surface of water visible from top of hydrasleeve
MW018	14/10/2024	17/10/2024	-	9.06	3.00	shallow	8.06	12.43	9.43	Good	0.67	20599	7.05	-1.4	198.6	28.2	low	clear	no odour	no sheen	some black suspended solids present
MW019	10/10/2024	16/10/2024	-	5.00	1.33	-	4.00	-	-	-	1.03	2284	6.88	34.2	234.2	29.7	low	clear	no odour	no sheen	-
MW111B	Well could not be located																				
MW112	10/10/2024	16/10/2024	2.5-5.5	5.5	1.70	-	4.5	11.54	9.84	Good	-	21496	6.42	-370.6	-170.6	27.2	low	clear	no odour	no sheen	-
MW114	10/10/2024	16/10/2024	-	6.69	1.54	shallow	5.69	8.9	7.36	Good	-	19513	6.62	-458.9	-258.9	28.1	low	clear	no odour	no sheen	-
MW115	10/10/2024	16/10/2024	12.7 - 15.7	15.85	2.27	deep	14.85	9.76	7.49	Good	0.96	817	7.17	-65.8	134.2	28.6	low	clear	no odour	no sheen	trace black and brown suspended solids
MW116	10/10/2024	16/10/2024	5 - 8	7.96	1.94	shallow	6.96	8.61	6.67	Good	1.22	9222	7.03	20.2	220.2	28.5	low	clear	no odour	no sheen	-
MW139	10/10/2024	16/10/2024	2.8 - 5.8	5.80	4.52	shallow	4.80	6.53	2.01	Good	-	6338	6.31	-489.8	-289.8	28.9	low	clear	no odour	no sheen	SWL not detected, IP stopped by Hydrasleeve, SWL taken after sampling
Former B Squadron																					
MW135	10/10/2024	16/10/2024	3 - 6	6.38	4.34	shallow	5.38	14.96	10.625	Good	1.07	3764	6.61	13.5	213.5	30.2	low	clear	no odour	no sheen	-
Former Fire Station																					
MW105	10/10/2024	16/10/2024	3 - 6	6.37	2.32	shallow	5.37	17.166	14.846	Good	1.72	2500	7.19	-29.4	170.6	28.4	low	clear	no odour	no sheen	-
MW128	10/10/2024	16/10/2024	2.6 - 5.6	5.60	2.85	shallow	4.60	17.556	14.706	Good	0.66	435.5	7.36	-170.2	29.8	27.4	low	yellow-brown	no odour	no sheen	-
MW345	10/10/2024	16/10/2024	3.5-5.5	6.00	3.12	-	5.00	18.309	15.189	Good	4.06	1733	7.42	-55.6	144.4	27.6	low	clear	no odour	no sheen	-
Former Fire Training Area																					
MW131	10/10/2024	16/10/2024	5.4 - 8.4	8.72	4.49	shallow	7.72	25.146	20.656	Good	1.41	690	6.99	43.1	243.1	27.5	low	clear	no odour	no sheen	-
Former Helicopter Squadron																					
MW102	10/10/2024	16/10/2024	8.5 - 14.5	9.81	3.99	shallow	8.81	22.87	18.88	Good	1.22	1783	8.29	-95.5	104.5	28.7	low	clear	no odour	no sheen	-
Lavarack Golf Course and Sporting Fields																					
MW065	10/10/2024	16/10/2024	1.5 - 6	6.50	2.54	shallow	5.50	13.42	10.88	Good	0.64	2858	7.7	-74.3	125.7	27.8	low	clear	no odour	no sheen	-
MW120	10/10/2024	16/10/2024	4 - 7	7.52	3.54	shallow	6.52	13.32	9.78	Good	7.77	4031	7.13	-132.5	67.5	25.5	low	yellow-brown	no odour	no sheen	-
MW121	10/10/2024	16/10/2024	2.5 - 5.8	6.41	3.10	shallow	5.41	13.67	10.57	Good	-	-	-	-	-	-	low	clear	no odour	no sheen	-
MW122	10/10/2024	16/10/2024	9.3 - 16.3	17.27	4.63	deep	16.27	14.44	9.81	Good	5.19	4030	7.33	-69.3	130.7	23.3	low	clear	no odour	no sheen	-
MW123I	10/10/2024	16/10/2024	5.8 - 8.8	10.10	3.09	deep	9.10	14.04	10.955	Good	0.93	12688	6.88	-30.8	169.2	27.1	low	clear	no odour	no sheen	-
MW123S	10/10/2024	16/10/2024	1 - 5	5.42	3.03	shallow	4.42	13.48	10.447	Good	1.5	1872	7.95	-75	125.0	25.9	low	clear	no odour	no sheen	-
Monocell																					
MW014A	10/10/2024	16/10/2024	4.6-9.6	9.6	5.63	-	8.6	23.055	17.425	Good	-	1257	5.53	-267.8	-67.8	29.6	low	slight brown/grey tinge	no odour	no sheen	dipper could not read GW and stopped on Hydrasleeve. Dipped after sampling. Bubbles
MW072	10/10/2024	16/10/2024	-	7.91	5.40	shallow	6.91	25.41	20.01	Good	-	1595	6.29	-363.3	-163.3	30.2	low	clear	no odour	slight sheen	-
MW074	10/10/2024	16/10/2024	-	7.15	4.35	shallow	6.15	23.28	18.93	Good	1.1	2665	7.08	35.8	235.8	31.9	low	clear	no odour	no sheen	-
MW077	10/10/2024	16/10/2024	3.0-9.0	9.00	4.38	-	8.00	-	-	Good	0.71	1022	6.95	-323.5	-123.5	31.3	low	clear	no odour	slight sheen	black suspended particles present.
MW106	10/10/2024	16/10/2024	2.5 - 8.5	10.18	5.34	deep	9.18	23.822	18.482	Good	-	1819	6.29	-345.7	-145.7	27.9	low	clear	no odour	no sheen	-
MW349	10/10/2024	16/10/2024	3.2-6.2	6.2	4.29	-	5.20	22.872	18.58	Good	-	2092	6.17	-264.7	-64.7	29.1	low	clear	no odour	no sheen	bubbles
Stockpile Designated Area 2																					
MW141	10/10/2024	16/10/2024	-	8.83	3.22	shallow	7.83	28.19	24.97	Good	1.37	715	6.91	-34.4	165.6	27.6	low	clear	no odour	no sheen	-
Suspected Aqueous Film Forming Foam (AFFF) Disposal Area																					
MW101	10/10/2024	16/10/2024	5 - 9	4.24	DRY	shallow	-	21.23	-	Good	Well dry										-
Top, Middle and Lower Dams																					
MW138	10/10/2024	16/10/2024	6 - 9	9.11	3.65	shallow	8.11	16.49	12.836	Good	0.53	3646	6.97	67.4	267.4	28.7	low	clear	no odour	no sheen	-
Base Boundary - On-base																					
MW002	10/10/2024	16/10/2024	-	5.26	2.98	shallow	4.26	11.35	8.372	Good	0.7	7506	7.2	37.5	237.5	27.3	low	cloudy white	no odour	no sheen	-
MW003	10/10/2024	16/10/2024	-	30.60	3.87	deep	29.60	14.108	10.235	Good	0.52	7950	7.06	-77.6	122.4	28.1	low	clear	no odour	no sheen	-
MW118	10/10/2024	16/10/2024	3 - 6	6.07	2.09	shallow	5.07	10.54	8.446	Good	-	4657	6.74	-231.6	-31.6	28.3	low	clear	no odour	no sheen	-
MW119	10/10/2024	16/10/2024	5.4 - 10.4	10.39	4.42	deep	9.39	18.78	14.359	Good	-	5392	6.81	-257.3	-57.3	28	low	clear	no odour	no sheen	-
MW124	10/10/2024	16/10/2024	3 - 6	7.88	2.70	shallow	6.88	14.41	11.71	Good	-	23000	6.08	-213.4	-13.4	27.6	low	clear	no odour	no sheen	-
MW125I	10/10/2024	16/10/2024	14.2 - 20.2	22.30	4.97	deep	21.30	16.67	11.703	Good	-	6727	6.45	-210.3	-10.3	27.9	low	clear	no odour	no sheen	-
MW125S	10/10/2024	16/10/2024	3.8 - 6.8	7.70	4.92	shallow	6.70	16.68	11.76	Good	-	4075	6.14	-188.8	11.2	27.5	low	clear	no odour	no sheen	-
Off-Base																					
MW205S	10/10/2024	16/10/2024	8 - 11	11.79	5.41	shallow	10.79	6.4	0.99	Good	1.73	16043	7.05	91.1	291.1	28.7	low	clear	no odour	no sheen	-
MW212	10/10/2024	16/10/2024	6 - 9	8.87	2.11	shallow	7.865	8.31	6.202	Good	0.86	12423	7.02	-171.9	28.1	28.9	low	clear	no odour	no sheen	-
MW217	10/10/2024	16/10/2024	3 - 6	5.22	1.07	shallow	4.221	7.35	6.283	Good	1.23	6043	6.35	-65.5	134.5	27.4	low	yellow-brown	no odour	no sheen	-
MW220S	10/10/2024	16/10/2024	2 - 5	6.03	1.70	shallow	5.028	3.75	2.05	Good	0.86	39004	6.49	-80.7	119.3	27.7	low	cloudy white	no odour	no sheen	-
MW226	10/10/2024	16/10/2024	-	5.50	0.99	shallow	4.5	-	-	Good	-	16174	6.75	-221.3	-21.3	26.6	low	clear	no odour	no sheen	black particles
MW232	10/10/2024	16/10/2024	1 - 4	3.80	0.49	shallow	2.797	2.31	1.818	Good	0.26	36324	6.31	-98.9	101.1	27.9	low	clear	no odour	no sheen	-
MW233	10/10/2024	16/10/2024	4.2 - 7.2	7.54	1.45	shallow	6.535	6.87	5.42	Good	1.01	3153	6.93	-44	156.0	27.8	low	pale yellow-brown	no odour	no sheen	minor suspended solids
MW235S	10/10/2024	16/10/2024	4.1 - 8.1	5.30	BLOCKED	shallow	-	7.08	-	Good	Well blocked										blocked by roots at 5.3 mbgl - unblocking unsuccessful
MW236S	10/10/2024	16/10/2024	4 - 7	6.93	5.06	shallow	5.927	6.53	1.47	Good	1.56	2992	7.4	48	248.0	27	high	cloudy brown	no odour	no sheen	-

Notes:
- = not available in Esdat
mbtoc = metres below top of casing
mAHD = metres above Australia Height Datum
mg/L = milligrams per litre
µS/cm = microsiemens per centimetre
mV = millivolt
°C = degrees Celsius
DO = Dissolved Oxygen
EC = Electrical Conductivity
* = Corrected Redox Potential was converted to standard hydrogen electrode by using the following equation (Corrected Redox Potential = measured YSI ORP + 200; YSI Environmental, 2005).

Table 2
Groundwater Analytical Results
Dry Season OMP - October 2024
Lavarack Barracks

			Regulated PFAS Compounds					Other PFAS Compounds																											
			Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFAS	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.05	0.05	0.02	0.05	0.05	0.02	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*			0.07	0.56	0.07	0.07																													
PFAS NEMP 2.0 2020 Recreational Water**			2	10	2	2																													
PFAS NEMP 2.0 2020 95% Eco Marine Water***				220	0.13																														
Location Code	Field ID	Date																																	
Eastern PFAS Contamination Area																																			
MW021	0229_MW021_241017	17 Oct 2024	0.67	0.02	0.87	1.54	1.85	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.15	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	0.11	<0.02	<0.05	<0.02	<0.02	1.71
MW018	0229_MW018_241017	17 Oct 2024	0.77	0.06	1.71	2.48	3.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	0.06	0.03	0.21	<0.02	<0.02	0.12	0.04	<0.09	<0.02	<0.02	2.94
MW019	0229_MW019_241016	16 Oct 2024	0.11	<0.01	<0.02	0.11	0.20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.17
MW111B	Well couldn't be located																																		
MW112	0229_MW112_241016	16 Oct 2024	1.68	0.06	0.56	2.24	3.32	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.23	<0.1	<0.02	<0.02	<0.02	0.04	0.05	0.36	<0.02	<0.02	0.26	0.08	<0.05	<0.02	<0.02	3.02
MW114	0229_MW114_241016	16 Oct 2024	10.2	1.18	1.84	12.0	25.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	2.28	0.6	<0.02	<0.02	<0.02	0.51	0.66	5.43	<0.02	<0.02	2.21	0.95	<0.05	<0.02	<0.02	23.1
MW115	0229_MW115_241016	16 Oct 2024	0.42	<0.01	0.16	0.58	1.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.20	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.17	<0.02	<0.02	0.11	0.05	<0.05	<0.02	<0.02	1.00
MW116	0229_MW116_241016	16 Oct 2024	0.18	<0.01	0.01	0.19	0.67	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.26	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.10	<0.02	<0.02	0.12	<0.02	<0.05	<0.02	<0.02	0.55
MW139	0229_MW139_241016	16 Oct 2024	0.91	0.03	1.81	2.72	3.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.06	<0.02	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	2.89
Former B Squadron																																			
MW135	0229_MW135_241016	16 Oct 2024	0.47	0.01	0.21	0.68	0.85	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	0.77
	0229_QC100_241016		0.48	<0.04	0.19	0.67	0.79	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	<0.04	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	0.74
	0229_QC200_241016		0.46	0.03	0.18	0.64	0.97	<0.01	<0.01	0.08	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.01	<0.01	<0.01	0.03	<0.01	0.05	<0.01	<0.05	0.05	<0.01	<0.01	<0.01	<0.01	0.86
Former Fire Station																																			
MW105	0229_MW105_241016	16 Oct 2024	57.7	3.13	31.0	88.7	136	<0.05	<0.05	0.32	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	8.33	1.2	<0.05	<0.05	<0.05	1.80	1.56	18.3	0.27	<0.05	8.96	3.28	<0.12	<0.05	<0.05	125
	0229_QC102_241016		51.9	3.10	27.4	79.3	123	<0.25	<0.25	<0.25	<0.25	<0.62	<0.62	<0.25	<0.62	<0.62	<0.25	6.86	<1.2	<0.25	<0.25	<0.25	2.23	1.80	19.6	0.35	<0.25	6.83	3.20	<0.62	<0.25	<0.25	114
	0229_QC202_241016		65	4.9	26	91	162.62	<0.01	0.02	0.19	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	14	2.4	<0.1	<0.01	<0.01	2.4	2.8	18	0.47	0.07	15	4.2	<0.01	<0.01	<0.01	137.56
MW128	0229_MW128_241016	16 Oct 2024	42.5	2.71	36.1	78.6	114	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	5.70	1.8	<0.05	<0.05	<0.05	1.84	1.12	13.6	0.35	<0.05	5.14	3.40	<0.12	<0.05	<0.05	107
MW345	0229_MW345_241016	16 Oct 2024	8.88	0.60	6.25	15.1	22.4	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	1.48	0.2	<0.02	<0.02	<0.02	0.46	0.27	2.34	0.11	<0.02	1.36	0.45	<0.06	<0.02	<0.02	20.5
Former Fire Training Area																																			
MW131	0229_MW131_241016	16 Oct 2024	16.4	2.47	24.5	40.9	61.7	<0.05	<0.05	0.51	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	3.15	0.8	<0.05	<0.05	<0.05	0.94	1.17	7.46	<0.05	<0.05	2.74	1.52	<0.12	<0.05	<0.05	58.0
Former Helicopter Squadron																																			
MW102	0229_MW102_241016	16 Oct 2024	0.38	0.03	0.39	0.77	1.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.05	<0.02	<0.02	0.07	<0.02	<0.05	<0.02	<0.02	0.98
Lavarack Golf Course and Sporting Fields																																			
MW065	0229_MW065_241016	16 Oct 2024	11.6	0.33	10.2	21.8	27.5	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	0.66	0.2	<0.02	<0.02	<0.02	0.42	0.17	2.73	<0.02	<0.02	0.82	0.38	<0.06	<0.02	<0.02	26.3
MW120	0229_MW120_241016		0.02	<0.01	0.07	0.09	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12
	0229_QC103_241016	16 Oct 2024	0.04	<0.01	0.06	0.10	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.14
	0229_QC203_241016		0.06	0.02	0.52	0.58	0.69	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.07	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.69
MW121	0229_MW121_241016	16 Oct 2024	0.64	<0.01	0.04	0.68	0.98	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.21	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.09	<0.02	<0.05	<0.02	<0.02	0.89
MW122	0229_MW122_241016	16 Oct 2024	1.05	0.06	2.78	3.83	4.44	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.1	<0.02	<0.02	<0.02	0.08	0.02	0.12	<0.02	<0.02	0.14	0.03	<0.05	<0.02	<0.02	4.22
MW123I	0229_MW123I_241016	16 Oct 2024	0.47	<0.01	<0.01	0.47	0.88	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.19	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	0.14	<0.02	<0.05	<0.02	<0.02	0.74
MW123S	0229_MW123S_241016	16 Oct 2024	5.62	0.31	3.80	9.42	13.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	1.34	0.2	<0.02	<0.02	<0.02	0.62	0.09	0.87	<0.02	<0.02	0.91	0.16	<0.05	<0.02	<0.02	12.4
Monocell																																			
MW014A	0229_MW014A_241016	16 Oct 2024	0.35	0.01	0.26	0.61	0.82	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	0.77
MW072	0229_MW072_241016	16 Oct 2024	26.8	1.37	29.6	56.4	79.2	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	4.83	0.5	<0.05	<0.05	<0.05	1.15	0.75	7.73	0.78	<0.05	4.38	1.27	<0.12	<0.05	<0.05	72.8
MW074	0229_MW074_241016	16 Oct 2024	37.8	2.57	47.5	85.3	118	<0.05	<0.05	0.11	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	5.59	0.8	<0.05	<0.05	<0.05	2.64	1.10	11.0	1.52	<0.05	6.23	1.72	<0.12	<0.05	<0.05	108
MW077	0229_MW077_241016	16 Oct 2024	0.31	0.03	0.66	0.97	1.22	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	1.17
MW106	0229_MW106_241016		0.07	<0.01	0.07	0.14	0.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.19
	0229_QC101_241016	16 Oct 2024	0.07	<0.01	0.05	0.12	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12
	0229_QC201_241016		0.17	0.01	0.14	0.31	0.5	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.05	0.02	<0.01	<0.01	<0.01	<0.01	0.47
MW349	0229_MW349_241016	16 Oct 2024	24.4	1.60	24.2	48.6	70.0	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	3.60	0.5	<0.05	<0.05	<0.05	1.74	0.77	7.53	0.71	<0.05	3.78	1.18	<0.12	<0.05	<0.05	63.8
Stockpile Designated Area 2																																			
MW141	0229_MW141_241016	16 Oct 2024	0.44	0.03	0.27	0.71	1.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.16	<0.02	<0.02	0.06	0.03	<0.05	<0.02	<0.02	1.03
Suspected Aqueous Film Forming Foam (AFFF) Disposal Area																																			
MW101	Well dry																																		
Top, Middle and Lower Dams																																			
MW138	0229_MW138_241016	16 Oct 2024	5.34	0.47	6.18	11.5	17.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	1.21	0.2	<0.02	<0.02	<0.02	0.46	0.24	2.24	0.06	<0.02	1.08	0.37	<0.05	<0.02	<0.02	16.2
Base Boundary - On-base																																			
MW002	0229_MW002_241016	16 Oct 2024	1.26	0.01	0.91	2.17	2.49	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.02	<0.02	<0.02	0.12	<0.02	<0.05	<0.02	<0.02	2.31
MW003	0229_MW003_241016	16 Oct 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
MW118	0229_MW118_241016		0.03	<0.01	<0.01	0.03	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.10
	0229_QC104_241016	16 Oct 2024	0.02	<0.01	0.01	0.03	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.10
	0229_QC204_241016		0.04	<0.01	0.02	0.06	0.12	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.12
MW119	0229_MW119_241016	16 Oct 2024	0.05	0.14	0.04	0.09	1.30	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.41	0.1	<0.02	<0.02	<0.02	<0.02	0.14	0.22	<0.02	<0.02	<0.02	0.20	<0.05	<0.02	<0.02	1.30
MW124	0229_MW124_241016	16 Oct 2024	<0.01	<0.01	0.02	0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02
MW125I	0229_MW125I_241016	16 Oct 2024	1.06	0.02	0.01	1.07	2.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.24	<0.1	<0.02	<0.02	<0.02	<0.02	0.02	0.51	<0.02	<0.02	0.18	0.08	<0.05	<0.02	<0.02	1.94
MW125S	0229_MW125S_241016	16 Oct 2024	4.05	0.11	0.05	4.10	7.71	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.72	<0.1	<0.02	<0.02	<0.02	0.04	0.09	1.81	<0.02	<0.02	0.61	0.23	<0.05	<0.02	<0.02	7.06
Off-Base																																			

Table 2
Groundwater Analytical Results
Dry Season OMP - October 2024
Lavarack Barracks

			Regulated PFAS Compounds					Other PFAS Compounds																												
			Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFAS	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.05	0.05	0.02	0.05	0.05	0.02	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*			0.07	0.56	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**			2	10	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***				220	0.13																															
Location Code	Field ID	Date																																		
MW205S	0229_MW205S_241016	16 Oct 2024	0.01	<0.01	0.02	0.03	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03
MW212	0229_MW212_241016	16 Oct 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
MW217	0229_MW217_241016	16 Oct 2024	0.01	<0.01	0.01	0.02	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05
MW220S	0229_MW220S_241016	16 Oct 2024	0.32	<0.01	0.02	0.34	0.55	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	0.47
MW226	0229_MW226_241016	16 Oct 2024	0.12	<0.01	0.02	0.14	0.33	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	0.28
MW232	0229_MW232_241016	16 Oct 2024	0.07	<0.01	0.11	0.18	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.24
MW233	0229_MW233_241016	16 Oct 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
MW235S			Well blocked																																	
MW236S	0229_MW236S_241016	16 Oct 2024	0.15	<0.01	0.20	0.35	0.43	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.41

Note:
* = Drinking water guidelines apply only to Off-Base groundwater results.
** = Recreation guidelines apply to On-Base and Off-Base groundwater results.
*** = Ecological guidelines do not apply to On-Base or Off Base groundwater results.

Table 3
Surface Water Quality Parameters
Dry Season OMP - October 2024
Lavarack Barracks

PS129286

Location Code	Sample Date	Sample Time	pH	Temperature (°C)	EC (µS/cm)	Redox (mV)	Corrected Redox Potential (mV)*	DO (mg/L)	Turbidity	Water Colour	Odour	Sheen	Water Flow	Comments
Eastern PFAS Contamination Area														
SW119	9/10/2024	12:40	8.76	33.3	14258	-3.1	196.9	3.52	low	clear with slight brown tinge	no odour	no sheen	Stagnant/ponded	parameters from a small pool closer to uni drive side, samples taken from under road. Part had shallow water and had dried showing crystalline salt line material (high EC water), orange, green and brown algae present
SW121	9/10/2024	15:05	7.10	27.3	5762	-34.9	165.1	6.14	low	clear	no odour	slight brown organic sheen	Stagnant/ponded	still, not moving, low level of water in body, concrete pipes from barracks channel feed into this pool. Rock lined, located before drain under uni ave roadway, algae on surface, not much sediment on base, mostly organics and rocks
Former Fire Station														
SW109	9/10/2024	11:00	INSUFFICIENT WATER FOR MEASURING PARAMETERS						low	clear	no odour	no sheen	Stagnant/ponded	high proportion of black suspended particles due to low water availability
SW110	9/10/2024	11:20	DRY											natural creek, no surface water present
Lavarack Golf Course and Sporting Fields														
SW129	9/10/2024	14:10	DRY											-
SW130	9/10/2024	14:20	DRY											-
Top, Middle and Lower Dams														
SW139	9/10/2024	10:40	6.72	24.8	756	-150	50.0	0.28	low	slight brown tinge	no odour	no sheen	Stagnant/ponded	brown suspended particles and organics
SW140	9/10/2024	13:10	7.15	25.8	855	-129.8	70.2	0.69	low	clear	no odour	no sheen	Stagnant/ponded	some suspended brown particles
SW144	9/10/2024	10:15	6.99	28.6	745	-120.7	79.3	0.86	low	clear	no odour	no sheen	Stagnant/ponded	some suspended organics
Remaining On-Base														
SW113	9/10/2024	11:35	DRY											-
SW120	9/10/2024	12:55	DRY											-
Base Boundary - On-base														
SW126	9/10/2024	15:40	DRY											-
SW128	9/10/2024	13:50	DRY											-
SW132	9/10/2024	14:40	7.20	25.0	2235	-117.2	82.8	0.49	low	slight brown tinge	no odour	no sheen	Stagnant/ponded	-
SW133	9/10/2024	15:20	DRY											-
SW134	9/10/2024	15:30	7.67	32.3	253.3	-156.6	43.4	5.32	low	clear	no odour	no sheen	Stagnant/ponded	-
SW135	9/10/2024	14:55	7.65	25.5	869	-139.5	60.5	1.13	low	clear	no odour	no sheen	Stagnant/ponded	-
SW136	9/10/2024	15:55	DRY											-
Off-Base														
SW203	9/10/2024	8:45	6.47	25.1	10412	-147.8	52.2	0.00	low	clear	slight organic odour	no sheen	Slowly flowing	-
SW205	9/10/2024	9:10	7.55	27.7	35583	14.1	214.1	0.00	low	clear	no odour	no sheen	Stagnant	-
SW211	9/10/2024	7:50	7.12	23.9	10370	11.6	211.6	0.00	low	slight brown tinge	no odour	slight organic sheen	Stagnant/ponded	brown and black suspended particles present - likely organic
SW212	9/10/2024	7:40	8.22	28.3	16992	79.9	279.9	0.04	low	clear with brown tint	no odour	no sheen	Stagnant/ponded	base, concrete lined ditch, water almost stagnant, ~2cm deep
SW217	9/10/2024	8:20	7.51	24	738	-95	105.0	0.00	low	brown tinge	no odour	no sheen	Slowly flowing	suspended particles and organics
SW220	8/10/2024	14:35	7.57	29.3	3707	121.4	321.4	0.00	low	brown tinge	no odour	no sheen	Slowly flowing	algae on surface
SW227	15/10/2024	9:00	8.13	27.4	227.9	-38.2	161.8	5.65	low	clear, pale yellow	no odour	no sheen	Slowly flowing	-
SW232	8/10/2024	14:15	8.09	30.8	49026	69.8	269.8	0.00	low	clear	no odour	no sheen	Stagnant/ponded	some suspended particles present, body of water fairly still with slight ripples, vegetation lining creek, including reeds in most parts of border
SW233	8/10/2024	15:00	7.01	23.2	1549	-69.3	130.7	0.00	low	slight brown tinge	no odour	no sheen	Stagnant/ponded	brown suspended particles
SW242	8/10/2024	13:50	8.14	32.9	44815	86.7	286.7	0.04	low	light brown to clear	no odour	no sheen	Slowly flowing	flowing water, algae on the rocks, brown suspended particles
SW243	8/10/2024	15:35	7.75	31.3	36216	123.6	323.6	0.00	low	clear	no odour	no sheen	Stagnant/ponded	-
SW244	15/10/2024	9:40	7.95	27.0	216.3	-31.2	168.8	4.39	low	clear, pale yellow	no odour	no sheen	Slowly flowing	-
SW245	15/10/2024	8:00	8.55	26.6	215.3	-69.1	130.9	6.26	low	clear, pale yellow	no odour	no sheen	Slowly flowing	minor suspended solids

Notes:

mg/L = milligrams per litre
µS/cm = microsiemens per centimetre
mV = millivolt
°C = degrees Celsius
DO = Dissolved Oxygen
EC = Electrical Conductivity
* = Corrected Redox Potential was converted to standard hydrogen electrode by using the following equation (Corrected Redox Potential = measured YSI ORP + 200; YSI Environmental, 2005).

Table 4
Surface Water Analytical Results
Dry Season OMP - October 2024
Lavarack Barracks

Location	Field ID	Date	Regulated PFAS Compounds					Other PFAS Compounds																													
			Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFAS	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.05	0.05	0.02	0.05	0.05	0.02	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01			
PFAS NEMP 2.0 2020 Drinking Water*			0.07	0.56	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**			2	10	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***				220	0.13																															
Eastern PFAS Contamination Area																																				
SW119	0229_SW119_241009	09 Oct 2024	0.91	0.06	0.64	1.55	2.44	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.24	<0.1	<0.02	<0.02	<0.02	0.04	0.03	0.25	<0.02	<0.02	0.14	0.07	<0.05	<0.02	<0.02	2.20			
SW121	0229_SW121_241009	09 Oct 2024	9.12	0.32	2.84	12.0	17.8	<0.09	<0.09	<0.09	<0.09	<0.22	<0.22	<0.09	<0.22	<0.22	<0.09	1.02	<0.4	<0.09	<0.09	<0.09	0.21	0.13	2.22	0.18	<0.09	1.10	0.32	<0.22	<0.09	<0.09	16.0			
Former Fire Station																																				
SW109	0229_SW109_241009	09 Oct 2024	35.3	2.54	161	196	230	<0.52	<0.52	<0.52	<0.52	<1.30	<1.30	<0.52	<1.30	<1.30	<0.52	5.19	<2.6	<0.52	<0.52	<0.52	1.97	0.78	13.6	0.78	<0.52	4.15	2.49	<1.30	<0.52	<0.52	221			
SW110	Dry																																			
Lavarack Golf Course and Sporting Fields																																				
SW129	Dry																																			
SW130	Dry																																			
Top, Middle and Lower Dams																																				
SW139	0229_SW139_241009		1.29	0.09	1.73	3.02	4.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.23	<0.1	<0.02	<0.02	<0.02	0.08	0.04	0.36	<0.02	<0.02	0.16	0.08	<0.05	<0.02	<0.02	3.82			
	0229_QC101_241009	09 Oct 2024	1.12	0.08	1.24	2.36	3.22	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.1	<0.02	<0.02	<0.02	0.06	0.04	0.31	<0.02	<0.02	0.15	0.06	<0.05	<0.02	<0.02	3.01			
	0229_QC201_241009		1.7	0.09	1.7	3.4	4.59	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.20	0.05	<0.01	<0.01	<0.01	0.11	0.05	0.39	<0.01	<0.05	0.20	<0.01	<0.01	<0.01	<0.01	4.18			
SW140	0229_SW140_241009		1.11	0.08	1.52	2.63	3.64	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.21	<0.1	<0.02	<0.02	<0.02	0.06	0.04	0.32	<0.02	<0.02	0.16	0.07	<0.05	<0.02	<0.02	3.35			
	0229_QC102_241009	09 Oct 2024	0.99	0.08	1.24	2.23	3.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	0.06	0.03	0.28	<0.02	<0.02	0.14	0.06	<0.05	<0.02	<0.02	2.82			
	0229_QC202_241009		3.1	0.17	3.5	6.6	8.61	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.34	0.10	<0.01	<0.01	<0.01	0.19	0.09	0.65	<0.01	<0.05	0.33	<0.2	<0.01	<0.01	<0.01	7.95			
SW144	0229_SW144_241009	09 Oct 2024	0.14	<0.01	0.16	0.30	0.37	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.37			
Remaining on-Base																																				
SW113	Dry																																			
SW120	Dry																																			
Base Boundary - On-base																																				
SW126	Dry																																			
SW128	Dry																																			
SW132	0229_SW132_241009	09 Oct 2024	3.25	0.21	3.06	6.31	9.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.61	0.1	<0.02	<0.02	<0.02	0.25	0.08	0.70	<0.02	<0.02	0.51	0.13	<0.05	<0.02	<0.02	8.14			
SW133	Dry																																			
SW134	0229_SW134_241009	09 Oct 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01			
SW135	0229_SW135_241009	09 Oct 2024	0.49	<0.01	0.41	0.90	1.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	1.00			
SW136	Dry																																			
Off-Base																																				
SW203	0229_SW203_241009	09 Oct 2024	1.29	0.06	1.28	2.57	3.46	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.25	<0.1	<0.02	<0.02	<0.02	0.09	0.03	0.20	<0.02	<0.02	0.15	0.04	<0.05	<0.02	<0.02	3.15			
SW205	0229_SW205_241009	09 Oct 2024	0.02	<0.01	0.03	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05			
SW211	0229_SW211_241009	09 Oct 2024	<0.04	<0.01	0.03	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.04			
SW212	0229_SW212_241009	09 Oct 2024	0.02	<0.01	0.03	0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09			
SW217	0229_SW217_241009	09 Oct 2024	<0.01	<0.01	0.01	0.01	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01			
SW220	0229_SW220_241008	08 Oct 2024	0.96	0.03	0.48	1.44	2.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.17	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.19	<0.02	<0.02	0.10	0.06	<0.05	<0.02	<0.02	1.89			
SW227	0229_SW227_241015	15 Oct 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01			
SW232	0229_SW232_241008	08 Oct 2024	0.01	<0.01	0.03	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04			
SW233	0229_SW233_241008	08 Oct 2024	0.77	0.05	0.92	1.69	2.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	0.04	0.02	0.20	<0.02	<0.02	0.11	0.04	<0.05	<0.02	<0.02	2.12			
SW242	0229_SW242_241008		0.02	<0.01	0.09	0.11	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11			
	0229_QC100_241008	08 Oct 2024	0.01	<0.01	0.10	0.11	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11			
	0229_QC200_241008		0.04	<0.01	0.17	0.21	0.24	<0.01	<0.01	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.24			
SW243	0229_SW243_241008	08 Oct 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01			
SW244	0229_SW244_241015	15 Oct 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01			
SW245	0229_QC103_241015		<0.01	<0.01	0.02	0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02			
	0229_QC203_241015	15 Oct 2024	<0.01	<0.01	0.03	0.03	0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03			
	0229_SW245_241015		<0.01	<0.01	0.02	0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02			

Note:
* = Drinking water guidelines apply only to Off-Base surface water results.
** = Recreation guidelines apply to On-Base and Off-Base surface water results.
*** = Ecological guidelines apply to Off Base surface water and On-Base dam (i.e., SW139, SW140, and SW144) results.

Table 5
Sediment Observation Results
Dry Season OMP - October 2024
Lavarack Barracks

PS129286

Location Code	Sample Date	Sample Description	Odour	Comments
Eastern PFAS Contamination Area				
SD119	9/10/2024	Sand, fine to medium grained with fine to coarse grained gravels, brown	no odour	drainage channel is concrete
SD121	9/10/2024	Red clay / clay like material, taken in dry areas upstream of surface water sample due to material availability	no odour	still water, low level of water, filled with reeds and weeds, outside barracks, concrete pipes from barracks channel feed into this pool, rock lined, before drain under uni ave roadway. Algae on surface, not much sediment on base, mostly organics and rocks
Former Fire Station				
SD109	9/10/2024	black / brown silt, very high leaf / organic content	no odour	drainage line filled with reeds and vegetation plant, no water in creek, sampled from concrete pipe under roadway where there was some water available. Concrete lined
SD110	9/10/2024	black silt with trace sand and high percentage of plant roots and organics	no odour	same vegetation as SD109 but plants reach higher
Lavarack Golf Course and Sporting Fields				
SD129	9/10/2024	brown sand, fine to coarse grained, gravels present	no odour	no water present in area, channel has concrete base with minimal vegetation, sample taken from point of sediment accumulation at end of channel from Lavarack barracks just before bridge of path
SD130	9/10/2024	brown sand, fine to coarse grained, gravels present	no odour	same waterway conditions as SD129, concrete channel approach: no SW present at all in channel or drains
Top, Middle and Lower Dams				
SD139	9/10/2024	silt with sand, grey-brown, high organic content	no odour	still water, over 30 m wide, depth unknown, plant covering surface, insects present, reeds, weeds, and plants on banks, trees lining bank
SD140	9/10/2024	silt with sand, grey-brown, high organic content	no odour	sediment taken approximately 20 m upstream from water sampling location due to sediment availability. Water is a dam, sample taken at edge of weir, covered in water plants same as the other end of the dam - waterway lined with reeds, weeds and trees, very deep.
SD144	9/10/2024	Sand, fine to medium grained, brown, organic content	no odour	still water, total depth unknown, quite full, lined by reeds and weeds, lots of insects, natural base of waterway
Remaining on-Base				
SD113	9/10/2024	sand, dry, fine to coarse grained, pale brown with pink inclusions	no odour	evidence of high flowing water in heavy rainfall, large cobbles and boulders in waterway, some sand (sampled), some weeds in creek with trees surrounding
SD120	9/10/2024	sand, dry, fine to coarse grained, brown with pink inclusions	no odour	channel base boulders and cobbles on surface, bank lined by reeds, weeds, trees and general vegetation - no water present
Base Boundary - On-base				
SD126	9/10/2024	sand, brown with pink - same as other dry locations	no odour	no water present on either side of pathway, S side towards barracks densely vegetated with no water. N side with concrete base and large drainage system (2 x 2 m) large deposits of sediment in drains
SD128	9/10/2024	brown sand, fine to coarse grained, gravels present	no odour	sample taken from under bridge where sediment appears to accumulate, grasses and weeds lining channel that feeds into location, no water present, inside fenceline
SD132	9/10/2024	clay, no sand, high organic content such as leaves	slight odour	pool at the end of the channel before leaving side. Raised banks surrounding every side, water plants on ~2% of surface, still, fish present, melalucas around pool, roots holding structure of banks, no water in channel upstream
SD133	9/10/2024	dry, sand fine to medium grained, gravels present, very minor organics - same as other dry locations	no odour	drain under uni ave. 30 cm diameter drain, no obvious channel from barracks, outside barracks fenceline
SD134	9/10/2024	dry, sand fine to medium grained, gravels present, some organics - same as other dry locations	no odour	short reeds and weeds present, gradual banks (not too steep), feeding into 8 m long drain leading to this point, concrete base, outside barracks fenceline
SD135	9/10/2024	brown sand with grey colourations, fine to coarse grained, gravels present	no odour	minimal water in channel, SW and SD sampled from pool approx 15 cm deep, 4 m long and 1m wide near fenceline, terrain rises slightly up to fenceline, natural base of channel densely vegetated with trees, reeds, weeds, with lots of cobbles and boulders up channel, on barrack side

Table 5
Sediment Observation Results
Dry Season OMP - October 2024
Lavarack Barracks

PS129286

Location Code	Sample Date	Sample Description	Odour	Comments
SD136	9/10/2024	DRY - same as other dry locations	no odour	In concrete drainage area just in front of concrete pipes that continue below. Sampled from 4 x 1.5 m sediment deposit just in front pipes. No water on Lavarack Barracks location
Off-Base				
SD203	9/10/2024	Sand, fine grained, trace gravels, black, black moderate organic, leaves and sticks present	strong organic odour	water still, orange and green algae or thin organic layer on surface, fallen leaves, banks structured by tree roots, evidence of high volumes of water in heavy rainfall, ~30 cm deep
SD205	9/10/2024	grey, clay and silt	no odour	area where sampled was still. Steep banks with mangroves up to 3 m high, birds present, water 2cm deep max
SD211	9/10/2024	Black / dark grey, silt, high organic content with lots of breaking down reeds	no odour	still water, high density of reeds in drainage line, steep bed, dry grass cuttings appear to be dropped in reeds - may contribute to high organic presence. Organic lined
SD212	9/10/2024	algae covered, gravelly silty sand, fine to coarse grained gravel and sand	moderate organic odour	Taken from the edge of the waterway slightly downstream. Concrete lined
SD217	9/10/2024	clay with sand, grey	no odour	water still, organic lined, fairly gradual gradient of banks, some reeds and weeds present in waterway, algae and leaves on surface, insects present
SD220	8/10/2024	grey, black, fine grained sand, very high organic content, gravels ~2.5cm, worms present, not much sediment - mostly rocks	strong organic odour	body of water covered in algae and lily pads, high density of reeds and weeds, birdlife present, lots of construction works in the area, sampled from edge of sw standing on cobbles along bed which have been used to delineate construction and paths from creek
SD227	15/10/2024	Weeds and rootlets, sand, brown, decomposing organic matter, aquatic plants in water	no odour	-
SD232	8/10/2024	grey, black, fine grained sand, high organic content, gravels ~2.5cm, worms present	no odour	some suspended particles present, body of water fairly still with slight ripples, vegetation lining creek, including reeds in most parts of border
SD233	8/10/2024	high organic content, lots of leaves and sticks present, brown sand with silt, fine to coarse grained sand, wet	no odour	body of water is still pool next to stormwater discharge, bordered by rock covered in metal wire to make structured wall. Water covered in surface leafy vegetation. Some lily pads, reeds, weeds, lots of black/grey frogs 1 cm diameter. Rocks predominantly at base of water hole
SD242	8/10/2024	black, grey, fine grained sand, high organic content, gravels ~2.5cm, worms present	no odour	flowing water, algae on the rocks, brown suspended particles
SD243	8/10/2024	large shells present, grey, fine grained sand, high organic content, gravels ~2.5cm, worms present	no odour	body of water moving gently west (left of sampling), some 30 cm - 1 m mangroves on edge of river bed is grasses
SD244	15/10/2024	sandy silt, grey, fine grained sand, organic matter - leaves	no odour	-
SD245	15/10/2024	surrounded by paperbarks and reeds, dark brown silt, decomposing eucalypt leaves, aquatic plants, wet	no odour	-

Table 6
Sediment Analytical Results
Dry Season OMP - October 2024
Lavarack Barracks

			Regulated PFAS Compounds					Other PFAS Compounds																								
			Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFAS	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002
Location Code	Field ID	Date																														
Eastern PFAS Contamination Area																																
SD119	0229_SD119_241009	09 Oct 2024	0.0035	0.0003	0.0021	0.0056	0.0076	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.0002	0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0071
SD121	0229_SD121_241009	09 Oct 2024	0.502	0.0435	0.418	0.920	1.31	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	0.0450	0.010	<0.0010	<0.0010	<0.0010	0.0201	0.0108	0.120	0.0680	<0.0010	0.0578	0.0168	<0.0025	<0.0010	0.0015	1.17
Former Fire Station																																
SD109	0229_SD109_241009	09 Oct 2024	0.149	0.0145	2.05	2.20	2.31	<0.0098	<0.0098	<0.0098	<0.0098	<0.0246	<0.0246	<0.0098	<0.0246	<0.0246	<0.0098	0.0106	<0.049	<0.0098	<0.0098	<0.0098	0.0251	<0.0098	0.0225	<0.0098	0.0212	<0.0098	0.0145	<0.0246	<0.0098	<0.0098	2.26
SD110	0229_SD110_241009	09 Oct 2024	0.0425	0.0039	0.667	0.710	0.776	<0.0010	<0.0010	<0.0010	<0.0010	<0.0024	<0.0024	<0.0010	<0.0024	<0.0024	<0.0010	0.0050	<0.005	<0.0347	<0.0010	<0.0037	<0.0080	0.0016	0.0072	<0.0015	0.0405	0.0034	0.0022	<0.0024	0.0026	<0.0023	0.729
Lavarack Golf Course and Sporting Fields																																
SD129	0229_SD129_241009	09 Oct 2024	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0020	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
SD130	0229_SD130_241009	09 Oct 2024	<0.0002	<0.0002	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007
Top, Middle and Lower Dams																																
SD139	0229_QC101_241009	09 Oct 2024	0.0065	0.0004	0.0625	0.0690	0.0740	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005	<0.0014	<0.0005	<0.0005	<0.0002	0.0008	<0.001	0.0003	<0.0002	<0.0002	0.0011	<0.0002	0.0008	<0.0005	0.0007	0.0006	<0.0002	<0.0005	0.0003	<0.0002	0.0710
	0229_QC201_241009		<0.005	<0.005	0.017	0.017	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.017
	0229_SD139_241009		0.0096	0.0005	0.0688	0.0784	0.0833	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0014	<0.001	<0.0006	<0.0002	<0.0010	<0.0010	<0.0002	0.0014	<0.0002	<0.0010	0.0013	0.0003	<0.0005	<0.0010	<0.0002	0.0820
SD140	0229_QC102_241009	09 Oct 2024	0.0028	0.0002	0.0240	0.0268	0.0286	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	0.0005	<0.0002	<0.0002	0.0003	<0.0002	0.0003	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0276
	0229_QC202_241009		<0.005	<0.005	0.013	0.013	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.013
	0229_SD140_241009		0.0030	0.0002	0.0245	0.0275	0.0298	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	0.0007	<0.0002	<0.0002	0.0004	<0.0002	0.0004	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0284
SD144	0229_SD144_241009	09 Oct 2024	0.0004	<0.0002	0.0052	0.0056	0.0056	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0056
Remaining on-Base																																
SD113	0229_SD113_241009	09 Oct 2024	<0.0002	<0.0002	0.0008	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008
SD120	0229_SD120_241009	09 Oct 2024	<0.0002	<0.0002	0.0018	0.0018	0.0018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018
Base Boundary - On-base																																
SD126	0229_SD126_241009	09 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
SD128	0229_SD128_241009	09 Oct 2024	0.0005	<0.0002	0.0019	0.0024	0.0024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0024
SD132	0229_SD132_241009	09 Oct 2024	0.0085	0.0004	0.0380	0.0465	0.0521	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0007	<0.001	0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0008	<0.0002	<0.0002	0.0007	<0.0002	<0.0005	0.0013	<0.0002	0.0484
SD133	0229_SD133_241009	09 Oct 2024	<0.0002	<0.0002	0.0006	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
SD134	0229_SD134_241009	09 Oct 2024	<0.0002	<0.0002	<0.0010	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
SD135	0229_SD135_241009	09 Oct 2024	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
SD136	0229_SD136_241009	09 Oct 2024	0.0017	<0.0002	0.0005	0.0022	0.0022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0022
Off-Base																																
SD203	0229_SD203_241009	09 Oct 2024	0.0016	<0.0002	0.0116	0.0132	0.0132	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0132
SD205	0229_SD205_241009	09 Oct 2024	<0.0002	<0.0002	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0002	<0.0012	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
SD211	0229_SD211_241009	09 Oct 2024	<0.0002	<0.0002	0.0036	0.0036	0.0063	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0021	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.0002	0.0036
SD212	0229_SD212_241009	09 Oct 2024	<0.0002	<0.0002	0.0010	0.0010	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
SD217	0229_SD217_241009	09 Oct 2024	<0.0002	<0.0002	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0002	<0.0013	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007
SD220	0229_SD220_241008	08 Oct 2024	0.0025	<0.0002	0.0098	0.0123	0.0123	<0.0005	<0.0005	<0.0005	<0.0005	<0.0026	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0123
SD227	0229_SD227_241015	15 Oct 2024	<0.0002	<0.0002	0.0009	0.0009	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
SD232	0229_SD232_241008	08 Oct 2024	<0.0002	<0.0002	0.0012	0.0012	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005	<0.0002	<0.0025	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
SD233	0229_SD233_241008	08 Oct 2024	0.0020	<0.0002	0.0142	0.0162	0.0166	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0166
SD242	0229_QC100_241008	08 Oct 2024	<0.0002	0.0002	0.0027	0.0027	0.0029	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0029
	0229_QC200_241008		<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01
	0229_SD242_241008		0.0006	0.0003	0.0035	0.0041	0.0044	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0044
SD243	0229_SD243_241008	08 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0002	<0.0012	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
SD244	0229_SD244_241015	15 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
SD245	0229_QC103_241015	15 Oct 2024	<0.0002	<0.0010	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0023	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	0229_QC203_241015		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0031	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	0229_SD245_241015		<0.0002	<0.0002	<0.0010	<0.0002	<0.0002	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0020	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

Location Code	Date	Regulated PFAS Compounds							Other PFAS Compounds																											
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																
Eastern PFAS Contamination Area																																				
MW018	12 Sep 2017	12.3	1.01	30.4	42.7	-	55.1	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	1.27	0.5	<0.02	<0.02	<0.02	0.87	1	4.75	<0.02	<0.02	2.16	0.8	<0.05	<0.02	<0.02	52
	30 Aug 2018	8.1	0.46	13	-	21.1	-	28.012	<0.01	<0.01	0.012	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	1.4	0.33	<0.01	<0.01	<0.01	0.46	0.3	2.3	<0.01	<0.01	1.2	0.45	<0.02	<0.02	<0.01	-
		7.9	0.59	15	-	22.9	-	35.1	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	1.4	1.4	<0.01	<0.01	<0.01	0.38	0.33	5.8	<0.01	<0.01	1.1	1.2	<0.02	<0.02	<0.01	-
	17 May 2019	25.3	1.38	23.6	48.9	48.9	73.8	73.8	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	5.03	0.4	<0.05	<0.05	<0.05	0.91	0.96	9.92	<0.05	<0.05	4.84	1.46	<0.12	<0.05	<0.05	68
	12 Jul 2019	0.99	0.057	2	-	2.99	-	3.803	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.17	<0.05	<0.01	<0.01	<0.01	0.044	0.036	0.31	<0.01	<0.01	0.14	0.056	<0.02	<0.02	<0.01	-
	04 Dec 2019	0.58	0.037	1	-	1.58	-	2.088	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.11	<0.05	<0.01	<0.01	<0.01	0.028	0.023	0.18	<0.01	<0.01	0.096	0.034	<0.02	<0.02	<0.01	-
	28 Oct 2020	15.3	1.12	22.1	37.4	37.4	53.7	53.67	<0.10	<0.10	<0.10	<0.10	<0.25	<0.25	<0.10	<0.25	<0.25	<0.10	2.97	0.8	<0.10	<0.10	<0.10	1.11	0.78	5.61	<0.10	<0.10	2.79	1.09	<0.25	<0.10	<0.10	49.8
	31 Mar 2021	13.8	0.87	22.8	36.6	36.6	48.4	48.45	<0.05	<0.05	<0.05	<0.05	<0.09	<0.09	<0.04	<0.09	<0.09	<0.04	2.22	0.4	<0.04	<0.04	<0.04	0.78	0.44	4.23	<0.04	<0.04	2.19	0.72	<0.09	<0.04	<0.04	45.5
	18 Aug 2021	2.66	0.19	4.69	7.35	7.35	9.76	9.76	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.44	<0.1	<0.02	<0.02	<0.02	0.16	0.11	0.90	<0.02	<0.02	0.46	0.15	<0.05	<0.02	<0.02	9.14
	04 Mar 2022	26.5	1.88	47.9	74.4	-	94.6	-	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	3.68	0.4	<0.05	<0.05	<0.05	1.78	0.73	6.86	<0.05	<0.05	3.98	0.92	<0.12	<0.05	<0.05	88.9
	25 Aug 2022	0.90	0.07	2.24	3.14	-	3.90	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.1	<0.02	<0.02	<0.02	0.07	0.04	0.24	<0.02	<0.02	0.14	0.04	<0.05	<0.02	<0.02	3.69
	09 Mar 2023	26.0	1.86	38.4	64.4	-	93.5	-	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	6.23	1.0	<0.05	<0.05	<0.05	1.78	1.02	9.89	<0.05	<0.05	5.46	1.82	<0.12	<0.05	<0.05	86.2
	23 Aug 2023	0.67	0.05	1.47	2.14	-	2.66	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.2	<0.02	<0.02	<0.02	0.04	0.02	0.20	<0.02	<0.02	0.08	0.02	<0.05	<0.02	<0.02	2.54
	07 Mar 2024	2.68	0.20	5.97	8.65	-	10.9	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.48	<0.1	<0.02	<0.02	<0.02	0.20	0.10	0.70	<0.02	<0.02	0.43	0.12	<0.05	<0.02	<0.02	10.2
	17 Oct 2024	0.77	0.06	1.71	2.48	-	3.12	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	0.06	0.03	0.21	<0.02	<0.02	0.12	0.04	<0.09	<0.02	<0.02	2.94
MW112	19 Sep 2018	5.4	0.19	2	-	7.4	-	10.353	<0.01	<0.01	0.023	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.53	0.13	<0.01	<0.01	<0.01	0.11	0.23	0.95	<0.01	<0.01	0.5	0.29	<0.02	<0.02	<0.01	-
		4.9	0.21	2	-	6.9	-	10.572	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.55	0.24	<0.01	<0.01	<0.01	0.082	0.23	1.5	<0.01	<0.01	0.51	0.35	<0.02	<0.02	<0.01	-
	16 Oct 2024	1.68	0.06	0.56	2.24	-	3.32	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.23	<0.1	<0.02	<0.02	<0.02	0.04	0.05	0.36	<0.02	<0.02	0.26	0.08	<0.05	<0.02	<0.02	3.02
MW114	18 Sep 2018	5.1	0.45	0.38	-	5.48	-	11	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.93	0.4	<0.01	<0.01	<0.01	0.2	0.38	1.9	<0.01	<0.01	0.78	0.48	<0.02	<0.02	<0.01	-
	28 Oct 2020	5.29	0.39	0.48	5.77	5.77	11.5	11.46	<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.04	<0.10	<0.10	<0.04	0.92	0.3	<0.04	<0.04	<0.04	0.21	0.33	2.20	<0.04	<0.04	0.94	0.40	<0.10	<0.04	<0.04	10.3
	31 Mar 2021	15.2	1.32	2.15	17.4	17.35	33.1	33.11	<0.08	<0.08	<0.08	<0.08	<0.21	<0.21	<0.08	<0.21	<0.21	<0.08	2.58	0.7	<0.08	<0.08	<0.08	0.75	0.92	5.68	<0.08	<0.08	2.80	1.01	<0.21	<0.08	<0.08	29.6
	18 Aug 2021	2.57	0.20	0.21	2.78	2.78	5.91	5.91	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.50	0.2	<0.02	<0.02	<0.02	0.10	0.17	1.18	<0.02	<0.02	0.56	0.22	<0.05	<0.02	<0.02	5.25
	04 Mar 2022	6.90	0.67	0.91	7.81	-	15.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	1.38	0.3	<0.02	<0.02	<0.02	0.42	0.45	2.71	<0.02	<0.02	1.34	0.44	<0.05	<0.02	<0.02	13.8
	24 Aug 2022	12.6	1.07	2.09	14.7	-	27.3	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	2.12	0.3	<0.02	<0.02	<0.02	0.70	0.73	4.57	<0.02	<0.02	2.36	0.78	<0.05	<0.02	<0.02	24.3
	09 Mar 2023	21.9	2.02	4.19	26.1	-	49.7	-	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	4.24	1.0	<0.02	<0.02	<0.02	1.56	1.26	8.01	<0.02	<0.02	4.09	1.46	<0.06	<0.02	<0.02	44.1
	24 Aug 2023	18.0	2.39	3.97	22.0	-	43.9	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	3.14	1.2	<0.02	<0.02	<0.02	0.82	1.49	7.72	<0.02	<0.02	3.57	1.61	<0.05	<0.02	<0.02	39.5
	07 Mar 2024	17.8	1.47	3.88	21.7	-	38.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	3.03	0.4	<0.02	<0.02	<0.02	0.98	0.96	5.83	<0.02	<0.02	2.84	0.97	<0.05	<0.02	<0.02	34.3
	16 Oct 2024	10.2	1.18	1.84	12.0	-	25.9	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	2.28	0.6	<0.02	<0.02	<0.02	0.51	0.66	5.43	<0.02	<0.02	2.21	0.95	<0.05	<0.02	<0.02	23.1

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

Location Code	Date	Regulated PFAS Compounds							Other PFAS Compounds																								
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																											
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																											
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																													
MW115	12 Oct 2018	1	0.038	0.52	-	1.52	-	1.856	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.062	<0.05	<0.01	<0.01	<0.01	0.024	<0.01	0.1	0.039	<0.01	0.073	<0.02	<0.02	<0.02	<0.01	-
	13 Oct 2018	1	0.024	0.57	-	1.57	-	1.902	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.062	<0.05	<0.01	<0.01	<0.01	0.029	<0.01	0.073	0.049	<0.01	0.095	<0.02	<0.02	<0.02	<0.01	-
	10 Jul 2019	0.51	0.015	0.85	-	1.36	-	2.175	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.34	0.082	<0.01	<0.01	<0.01	<0.01	<0.01	0.22	<0.01	<0.01	0.096	0.062	<0.02	<0.02	<0.01	-
	05 Dec 2019	0.77	0.019	0.81	-	1.58	-	2.31	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.28	0.06	<0.01	<0.01	<0.01	0.017	<0.01	0.17	0.021	<0.01	0.12	0.043	<0.02	<0.02	<0.01	-
	28 Oct 2020	0.54	0.02	0.55	1.09	1.09	1.95	1.95	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.44	<1.10	<0.02	<0.02	<0.02	0.02	<0.02	0.26	<0.02	<0.02	0.12	<0.10	<0.05	<0.02	<0.02	1.81
	31 Mar 2021	0.32	<0.01	0.46	0.78	0.78	1.37	1.37	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.28	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	0.16	<0.02	<0.02	0.12	0.03	<0.05	<0.02	<0.02	1.25
	18 Aug 2021	0.27	<0.01	0.34	0.61	0.61	1.02	1.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.19	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.13	<0.02	<0.02	0.07	0.02	<0.05	<0.02	<0.02	0.95
	04 Mar 2022	0.36	<0.01	0.20	0.56	-	0.94	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.15	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.14	<0.02	<0.02	0.09	<0.02	<0.05	<0.02	<0.02	0.85
	24 Aug 2022	0.16	<0.01	0.10	0.26	-	0.47	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.43
	08 Mar 2023	0.34	<0.01	0.16	0.50	-	0.85	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.15	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.12	<0.02	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	0.77
	24 Aug 2023	0.42	<0.01	0.14	0.56	-	0.91	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.14	<0.02	<0.02	0.07	<0.02	<0.05	<0.02	<0.02	0.84
	08 Mar 2024	0.30	<0.01	0.12	0.42	-	0.75	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.09	<0.02	<0.02	0.08	0.02	<0.05	<0.02	<0.02	0.67
	16 Oct 2024	0.42	<0.01	0.16	0.58	-	1.11	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.20	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.17	<0.02	<0.02	0.11	0.05	<0.05	<0.02	<0.02	1.00
MW116	13 Sep 2018	0.017	<0.01	<0.02	-	0.017	-	0.034	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.017	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	10 Jul 2019	0.027	<0.01	<0.02	-	0.027	-	0.072	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.024	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.021	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	28 Oct 2020	0.07	<0.01	0.01	0.08	0.08	0.20	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.17
	31 Mar 2021	0.07	<0.01	<0.01	0.07	0.07	0.17	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.15
	18 Aug 2021	0.12	<0.01	0.01	0.13	0.13	0.36	0.36	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	0.05	0.02	<0.05	<0.02	<0.02	0.31
	04 Mar 2022	0.11	<0.01	0.02	0.13	-	0.32	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.28
	24 Aug 2022	0.10	<0.01	<0.01	0.10	-	0.26	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.23
	10 Mar 2023	0.11	<0.01	<0.01	0.11	-	0.33	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.29
	24 Aug 2023	0.16	<0.01	0.02	0.18	-	0.41	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.15	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.38
	08 Mar 2024	0.21	<0.01	0.02	0.23	-	0.57	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.22	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	0.07	<0.02	<0.05	<0.02	<0.02	0.50
	16 Oct 2024	0.18	<0.01	0.01	0.19	-	0.67	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.26	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.10	<0.02	<0.02	0.12	<0.02	<0.05	<0.02	<0.02	0.55
MW139	12 Sep 2018	1.6	0.042	2.7	-	4.3	-	4.923	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.13	0.063	<0.01	<0.01	<0.01	0.048	0.018	0.14	0.014	<0.01	0.14	0.028	<0.02	<0.02	<0.01	-
	11 Jul 2019	1.5	0.038	2.1	-	3.6	-	4.159	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.12	0.062	<0.01	<0.01	<0.01	0.038	0.016	0.12	0.011	<0.01	0.13	0.024	<0.02	<0.02	<0.01	-
	05 Dec 2019	1.5	0.034	2.2	-	3.7	-	4.234	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.097	0.055	<0.01	<0.01	<0.01	0.047	0.014	0.13	0.014	<0.01	0.12	0.023	<0.02	<0.02	<0.01	-
	28 Oct 2020	1.32	0.04	2.04	3.36	3.36	3.89	3.89	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.12	<0.02	<0.02	0.13	0.03	<0.05	<0.02	<0.02	3.70
	31 Mar 2021	1.47	0.04	2.85	4.32	4.32	4.83	4.83	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.12	<0.02	<0.02	0.14	0.03	<0.05	<0.02	<0.02	4.62
	18 Aug 2021	1.34	0.04	2.13	3.47	3.47	3.98	3.98	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.12	<0.02	<0.02	0.15	0.02	<0.05	<0.02	<0.02	3.76
	03 Mar 2022	1.23	0.04	2.32	3.55	-	3.95	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.08	<0.02	<0.02	0.12	<0.02	<0.05	<0.02	<0.02	3.77
	25 Aug 2022	0.96	0.03	1.70	2.66	-	2.98	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.07	<0.02	<0.02	0.10	<0.02	<0.05	<0.02	<0.02	2.84
	09 Mar 2023	1.04	0.03	1.93	2.97	-	3.36	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.08	<0.02	<0.02	0.11	<0.02	<0.05	<0.02	<0.02	3.20
	24 Aug 2023	1.10	0.04	2.15	3.25	-	3.62	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.09	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.08	<0.02	<0.02	0.11	<0.02	<0.05	<0.02	<0.02	3.46
	08 Mar 2024	0.53	0.02	1.39	1.92	-	2.09	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.03	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	2.03
	16 Oct 2024	0.91	0.03	1.81	2.72	-	3.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.06	<0.02	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	2.89

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

PS129286

Location Code	Date	Regulated PFAS Compounds							Other PFAS Compounds																										
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																													
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																													
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																															
Former B Squadron																																			
MW135	10 Oct 2018	1.8	0.092	2	-	3.8	-	4.876	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.31	0.081	<0.01	<0.01	<0.01	0.068	0.043	0.19	<0.01	<0.01	0.23	0.062	<0.02	<0.02	<0.01	-
		1.7	0.092	1.8	-	3.5	-	5.228	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.28	0.2	<0.01	<0.01	<0.01	0.055	0.041	0.72	<0.01	<0.01	0.19	0.15	<0.02	<0.02	<0.01	-
	10 Jul 2019	5.5	0.19	3.9	-	9.4	-	10.853	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.21	0.086	<0.01	<0.01	<0.01	0.26	0.078	0.38	<0.01	<0.01	0.2	0.049	<0.02	<0.02	<0.01	-
	04 Dec 2019	2	0.12	2.6	-	4.6	-	5.504	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.16	0.068	<0.01	<0.01	<0.01	0.13	0.028	0.21	<0.01	<0.01	0.16	0.028	<0.02	<0.02	<0.01	-
	28 Oct 2020	1.73	0.07	2.37	4.10	4.1	4.69	4.69	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.10	<0.02	<0.02	<0.02	0.13	0.02	0.11	<0.02	<0.02	0.13	<0.10	<0.05	<0.02	<0.02	4.43
	31 Mar 2021	14.0	0.34	9.54	23.5	23.54	27.2	27.19	<0.05	<0.05	<0.05	<0.05	<0.09	<0.09	<0.04	<0.09	<0.09	<0.04	0.53	<0.2	<0.04	<0.04	<0.04	0.75	0.13	1.04	<0.04	<0.04	0.73	0.13	<0.09	<0.04	<0.04	25.7
	18 Aug 2021	1.70	0.07	2.41	4.11	4.11	4.74	4.74	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	0.11	0.02	0.15	<0.02	<0.02	0.14	<0.02	<0.05	<0.02	<0.02	4.49
	04 Mar 2022	1.04	0.05	1.78	2.82	-	3.25	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	0.09	<0.02	0.08	<0.02	<0.02	0.10	<0.02	<0.05	<0.02	<0.02	3.06
	24 Aug 2022	0.63	0.02	0.55	1.18	-	1.40	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.02	<0.02	<0.02	0.07	<0.02	<0.05	<0.02	<0.02	1.29
	09 Mar 2023	2.45	0.15	11.8	14.2	-	15.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.21	<0.1	<0.02	<0.02	<0.02	0.33	0.03	0.27	<0.02	<0.02	0.20	0.05	<0.05	<0.02	<0.02	15.0
	24 Aug 2023	0.51	0.02	0.42	0.93	-	1.11	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.05	<0.02	<0.02	1.01
	07 Mar 2024	2.29	0.14	12.7	15.0	-	16.1	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.17	<0.1	<0.02	<0.02	<0.02	0.28	0.04	0.28	<0.02	<0.02	0.12	0.04	<0.05	<0.02	<0.02	15.7
	16 Oct 2024	0.47	0.01	0.21	0.68	-	0.85	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	0.77
Former Fire Station																																			
MW105	17 Jul 2018	1.3	0.053	0.83	-	2.13	-	3.172	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.15	0.052	<0.01	<0.01	<0.01	0.04	0.022	0.48	0.021	<0.01	0.12	0.087	<0.02	<0.02	0.017	-
	31 Aug 2018	55	2.4	21	-	76	-	117.437	<0.01	0.016	0.46	0.039	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	7.6	1.3	<0.01	<0.01	<0.01	1.5	1.4	17	0.21	<0.01	6.7	2.8	<0.02	<0.02	0.012	-
	12 Jul 2019	49	1.6	26	-	75	-	104.166	<0.01	0.01	0.36	0.056	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	6	0.85	<0.01	<0.01	<0.01	1.2	1.1	11	0.16	0.013	4.9	1.9	<0.02	<0.02	0.017	-
	03 Dec 2019	42	1.6	26	-	68	-	96.155	<0.01	<0.01	0.3	0.039	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	4.9	0.91	<0.01	<0.01	<0.01	0.98	0.87	12	0.13	0.011	4.7	1.7	<0.02	<0.02	0.015	-
	29 Oct 2020	37.6	1.65	25.8	63.4	63.4	91.3	91.33	<0.07	<0.07	0.24	<0.07	<0.17	<0.17	<0.07	<0.17	<0.17	<0.07	4.52	0.7	<0.07	<0.07	<0.07	1.71	1.02	11.2	0.11	<0.07	5.00	1.78	<0.17	<0.07	<0.07	84.5
	31 Mar 2021	31.3	1.64	29.6	60.9	60.9	84.0	83.98	<0.40	<0.40	<0.40	<0.40	<1.00	<1.00	<0.40	<1.00	<1.00	<0.40	3.76	<2.0	<0.40	<0.40	<0.40	1.56	0.92	9.12	<0.40	<0.40	4.48	1.60	<1.00	<0.40	<0.40	77.9
	18 Aug 2021	33.4	1.62	27.3	60.7	60.7	86.4	86.39	<0.05	<0.05	0.24	<0.05	<0.09	<0.09	<0.04	<0.09	<0.09	<0.04	4.13	0.7	<0.04	<0.04	<0.04	1.50	0.96	9.94	0.14	<0.04	4.84	1.62	<0.09	<0.04	<0.04	79.9
	03 Mar 2022	20.9	1.03	16.9	37.8	-	53.6	-	<0.05	<0.05	0.12	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	2.72	0.4	<0.05	<0.05	<0.05	1.04	0.58	5.92	0.08	<0.05	3.00	0.91	<0.12	<0.05	<0.05	49.5
	24 Aug 2022	35.4	1.65	25.3	60.7	-	86.1	-	<0.05	<0.05	0.20	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	4.16	0.4	<0.02	<0.02	<0.02	1.95	1.05	8.50	0.11	<0.02	5.94	1.47	<0.05	<0.02	<0.02	78.1
	09 Mar 2023	39.7	1.80	28.0	67.7	-	98.3	-	<0.05	<0.05	0.18	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	5.70	0.7	<0.05	<0.05	<0.05	2.14	1.17	11.2	0.17	<0.05	5.66	1.91	<0.12	<0.05	<0.05	90.4
	24 Aug 2023	61.6	3.10	37.6	99.2	-	143	-	<0.10	<0.10	0.40	<0.10	<0.25	<0.25	<0.10	<0.25	<0.25	<0.10	6.77	0.8	<0.10	<0.10	<0.10	2.81	1.68	15.6	0.30	<0.10	9.38	2.79	<0.25	<0.10	<0.10	130
	07 Mar 2024	39.8	1.92	27.0	66.8	-	95.0	-	<0.05	<0.05	0.22	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	4.98	0.5	<0.02	<0.02	<0.02	1.72	1.16	10.1	0.21	<0.02	5.60	1.81	<0.05	<0.02	<0.02	87.5
	16 Oct 2024	57.7	3.13	31.0	88.7	-	136	-	<0.05	<0.05	0.32	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	8.33	1.2	<0.05	<0.05	<0.05	1.80	1.56	18.3	0.27	<0.05	8.96	3.28	<0.12	<0.05	<0.05	125

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

PS129286

Location Code	Date	Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																												
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																												
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																														
MW128	18 Jul 2018	5	0.36	22	-	27	-	31.21	<0.01	<0.01	0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.43	0.13	<0.01	<0.01	<0.01	0.42	0.11	0.92	1.2	<0.01	0.41	0.22	<0.02	<0.02	<0.01	-
	31 Aug 2018	240	18	380	-	620	-	804.507	<0.01	0.038	<0.01	0.089	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	18	8.2	<0.01	0.22	<0.01	13	6.3	51	35	0.5	20	14	<0.02	<0.02	0.16	-
		290	19	490	-	780	-	1,326.66	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	25	31	<0.01	0.2	<0.01	13	9.3	350	30	<0.01	22	47	<0.02	<0.02	0.16	-
	12 Jul 2019	240	17	510	-	750	-	929.8	<0.01	<0.01	0.44	0.1	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	24	5.3	<0.01	0.34	<0.01	16	5.6	52	26	0.83	22	9.5	<0.02	<0.02	0.69	-
	03 Dec 2019	370	27	570	-	940	-	1,207.19	<0.01	0.013	0.62	0.17	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	38	8.3	<0.01	0.2	<0.01	25	10	86	17	0.57	38	16	<0.02	<0.02	0.32	-
	29 Oct 2020	248	17.8	483	731	731	919	919.38	<0.70	<0.70	<0.70	<0.70	<1.75	<1.75	<0.70	<1.75	<1.75	<0.70	24.3	3.8	<0.70	<0.70	<0.70	21.5	6.58	58.8	17.2	<0.70	28.0	10.4	<1.75	<0.70	<0.70	853
	31 Mar 2021	419	26.9	876	1,300	1,295	1,620	1,624.7	<2.26	<2.26	<2.26	<2.26	<5.64	<5.64	<2.26	<5.64	<5.64	<2.26	34.5	12.2	<2.26	<2.26	<2.26	33.4	10.2	98.4	49.4	<2.26	43.3	21.4	<5.64	<2.26	<2.26	1,500
	18 Aug 2021	306	19.4	461	767	767	1,000	1,000.02	<0.81	<0.81	<0.81	<0.81	<2.02	<2.02	<0.81	<2.02	<2.02	<0.81	28.9	6.0	<0.81	<0.81	<0.81	21.2	8.22	80.1	20.8	<0.81	32.8	15.6	<2.02	<0.81	<0.81	925
	03 Mar 2022	82.5	4.52	67.2	150	-	199	-	<0.25	<0.25	<0.25	<0.25	<0.62	<0.62	<0.25	<0.62	<0.62	<0.25	6.68	2.0	<0.25	<0.25	<0.25	4.78	1.75	16.3	1.75	<0.25	7.78	3.40	<0.62	<0.25	<0.25	184
	12 Jul 2022	99.2	5.32	52.4	152	151.6	220	219.71	<0.25	<0.25	<0.25	<0.25	<0.62	<0.62	<0.25	<0.62	<0.62	<0.25	9.35	2.2	<0.25	<0.25	<0.25	4.95	2.22	27.2	0.85	<0.25	10.8	5.22	<0.62	<0.25	<0.25	203
	24 Aug 2022	163	8.35	152	315	-	428	-	<0.05	<0.05	0.08	<0.05	<0.09	<0.09	<0.04	<0.09	<0.09	<0.04	17.5	3.0	0.04	0.05	<0.04	9.26	4.37	38.4	3.09	0.14	20.5	7.83	<0.09	<0.04	<0.04	394
	09 Mar 2023	2.75	0.15	6.05	8.80	-	11.4	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.24	0.6	0.04	<0.02	<0.02	0.15	0.06	0.73	<0.04	<0.02	0.25	0.40	<0.05	<0.02	0.02	11.0
	24 Aug 2023	419	32.7	786	1,200	-	1,490	-	<0.96	<0.96	<0.96	1.53	<2.39	<2.39	<0.96	<2.39	<2.39	<0.96	34.5	5.3	<0.96	<0.96	<0.96	35.9	10.2	99.0	2.48	5.16	40.6	14.8	<2.39	<0.96	<0.96	1,400
	07 Mar 2024	336	27.1	763	1,100	-	1,320	-	<0.35	<0.35	<0.35	1.13	<0.87	<0.87	<0.35	<0.87	<0.87	<0.35	31.3	2.1	0.56	<0.35	<0.35	29.3	9.17	72.1	2.23	3.22	34.2	14.2	<0.87	<0.35	<0.35	1,260
	16 Oct 2024	42.5	2.71	36.1	78.6	-	114	-	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	5.70	1.8	<0.05	<0.05	<0.05	1.84	1.12	13.6	0.35	<0.05	5.14	3.40	<0.12	<0.05	<0.05	107
MW345	17 Jan 2022	11.2	0.82	6.60	17.8	17.8	27.5	27.5	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	1.69	0.3	<0.02	<0.02	<0.02	0.69	0.45	2.95	0.22	<0.02	1.96	0.62	<0.06	<0.02	<0.02	24.6
	19 May 2022	12.9	0.88	9.62	22.5	22.52	32.8	32.84	<0.05	<0.05	0.06	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	1.86	0.3	<0.02	<0.02	<0.02	0.88	0.44	2.90	0.20	<0.02	2.26	0.54	<0.06	<0.02	<0.02	29.5
	16 Oct 2024	8.88	0.60	6.25	15.1	-	22.4	-	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	1.48	0.2	<0.02	<0.02	<0.02	0.46	0.27	2.34	0.11	<0.02	1.36	0.45	<0.06	<0.02	<0.02	20.5
Former Fire Training Area																																		
MW131	21 Sep 2018	2.1	0.26	5.3	-	7.4	-	10.055	<0.01	<0.01	0.045	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.45	0.12	<0.01	<0.01	<0.01	0.15	0.14	0.93	<0.01	<0.01	0.38	0.18	<0.02	<0.02	<0.01	-
		2.6	0.27	5.3	-	7.9	-	22.69	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.57	2.7	<0.01	<0.01	<0.01	0.13	0.18	8.3	<0.01	<0.01	0.44	2.2	<0.02	<0.02	<0.01	-
	09 Jul 2019	7.2	0.79	16	-	23.2	-	30.699	<0.01	<0.01	0.15	0.016	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	1.3	0.4	<0.01	<0.01	<0.01	0.41	0.44	2.4	0.013	<0.01	1	0.58	<0.02	<0.02	<0.01	-
	03 Dec 2019	4	0.46	11	-	15	-	19.51	<0.01	<0.01	0.1	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.7	0.22	<0.01	<0.01	<0.01	0.28	0.25	1.5	<0.01	<0.01	0.67	0.33	<0.02	<0.02	<0.01	-
	28 Oct 2020	2.95	0.28	5.88	8.83	8.83	11.8	11.81	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.53	<0.50	<0.02	<0.02	<0.02	0.21	0.17	1.08	<0.02	<0.02	0.44	0.20	<0.05	<0.02	<0.02	11.2
	31 Mar 2021	4.97	0.47	8.08	13.0	13.05	18.8	18.82	<0.05	<0.05	0.08	<0.05	<0.10	<0.10	<0.04	<0.10	<0.10	<0.04	1.00	0.2	<0.04	<0.04	<0.04	0.23	0.34	2.02	<0.04	<0.04	1.02	0.41	<0.10	<0.04	<0.04	17.6
	19 Aug 2021	2.80	0.27	5.32	8.12	8.12	11.2	11.17	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.54	<0.1	<0.02	<0.02	<0.02	0.14	0.18	1.09	<0.02	<0.02	0.56	0.22	<0.05	<0.02	<0.02	10.5
	03 Mar 2022	3.55	0.39	5.75	9.30	-	13.3	-	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.74	0.1	<0.02	<0.02	<0.02	0.18	0.23	1.37	<0.02	<0.02	0.64	0.26	<0.05	<0.02	<0.02	12.5
	26 Aug 2022	240	20.7	163	403	-	656	-	<0.05	<0.05	0.18	<0.05	<0.09	<0.09	<0.04	<0.09	<0.09	<0.04	62.0	5.7	<0.04	<0.04	<0.04	17.3	10.9	67.2	0.79	<0.04	50.3	18.3	<0.09	<0.04	<0.04	588
	07 Oct 2022	36.8	3.60	45.3	82.1	-	124	-	<0.05	<0.05	0.44	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	8.30	1.6	<0.05	<0.05	<0.05	2.93	2.22	12.5	0.10	<0.05	7.68	3.08	<0.12	<0.05	<0.05	114
	09 Mar 2023	51.2	5.98	75.5	127	-	190	-	<0.09	<0.09	0.56	<0.09	<0.23	<0.23	<0.09	<0.23	<0.23	<0.09	12.2	2.8	<0.09	<0.09	<0.09	3.60	3.23	19.9	<0.20	<0.09	10.3	4.82	<0.23	<0.09	<0.09	176
	25 Aug 2023	27.4	3.35	36.2	63.6	-	97.0	-	<0.10	<0.10	0.50	<0.10	<0.24	<0.24	<0.10	<0.24	<0.24	<0.10	5.10	1.5	<0.10	<0.10	<0.10	1.38	1.87	13.1	<0.10	<0.10	4.48	2.10	<0.24	<0.10	<0.10	91.1
	07 Mar 2024	5.95	0.69	3.69	9.64	-	16.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	1.59	0.3	<0.02	<0.02	<0.02	0.32	0.37	1.89	<0.02	<0.02	1.14	0.52	<0.05	<0.02	<0.02	15.0
	16 Oct 2024	16.4	2.47	24.5	40.9	-	61.7	-	<0.05	<0.05	0.51	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	3.15	0.8	<0.05	<0.05	<0.05	0.94	1.17	7.46	<0.05	<0.05	2.74	1.52	<0.12	<0.05	<0.05	58.0

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

PS129286

Location Code	Date	Regulated PFAS Compounds							Other PFAS Compounds																										
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																													
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																													
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																															
Former Helicopter Squadron																																			
MW102	21 Sep 2018	2.6	0.19	1.9	-	4.5	-	6.774	<0.01	<0.01	0.014	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.61	0.13	<0.01	<0.01	<0.01	0.11	0.11	0.52	<0.01	<0.01	0.45	0.14	<0.02	<0.02	<0.01	-
		2.3	0.17	3.3	-	5.6	-	9.503	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.55	0.59	<0.01	<0.01	<0.01	0.13	0.093	1.6	<0.01	<0.01	0.39	0.38	<0.02	<0.02	<0.01	-
	08 Jul 2019	1.6	0.12	0.36	-	1.96	-	3.456	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.43	0.1	<0.01	<0.01	<0.01	0.072	0.064	0.32	<0.01	<0.01	0.3	0.09	<0.02	<0.02	<0.01	-
	03 Dec 2019	2.8	0.14	0.37	-	3.17	-	5.155	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.52	0.13	<0.01	<0.01	<0.01	0.11	0.085	0.47	<0.01	<0.01	0.41	0.12	<0.02	<0.02	<0.01	-
	29 Oct 2020	0.54	0.02	0.88	1.42	1.42	1.86	1.86	<0.05	<0.05	0.12	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.06	<0.02	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	1.75
	31 Mar 2021	0.73	0.04	0.98	1.71	1.71	2.38	2.38	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	0.1	<0.02	<0.02	<0.02	0.03	0.02	0.11	<0.02	<0.02	0.12	0.05	<0.05	<0.02	<0.02	2.23
	18 Aug 2021	2.96	0.20	1.39	4.35	4.35	6.72	6.72	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.60	0.1	<0.02	<0.02	<0.02	0.19	0.11	0.52	<0.02	<0.02	0.51	0.14	<0.05	<0.02	<0.02	6.02
	03 Mar 2022	2.27	0.18	1.47	3.74	-	5.48	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.47	<0.1	<0.02	<0.02	<0.02	0.17	0.08	0.37	<0.02	<0.02	0.38	0.09	<0.05	<0.02	<0.02	4.93
	24 Aug 2022	2.11	0.16	1.04	3.15	-	4.78	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.46	<0.1	<0.02	<0.02	<0.02	0.15	0.08	0.34	<0.02	<0.02	0.33	0.11	<0.05	<0.02	<0.02	4.30
	09 Mar 2023	0.42	0.03	0.42	0.84	-	1.20	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.06	<0.02	<0.02	0.07	<0.02	<0.05	<0.02	<0.02	1.09
	24 Aug 2023	1.85	0.19	1.92	3.77	-	5.39	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.42	<0.1	<0.02	<0.02	<0.02	0.16	0.08	0.32	<0.02	<0.02	0.34	0.11	<0.05	<0.02	<0.02	4.89
	07 Mar 2024	0.06	<0.01	0.10	0.16	-	0.16	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.16
	16 Oct 2024	0.38	0.03	0.39	0.77	-	1.07	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.05	<0.02	<0.02	0.07	<0.02	<0.05	<0.02	<0.02	0.98
Lavarack Golf Course and Sporting Fields																																			
MW065	14 Sep 2017	40.2	0.37	17.5	57.7	-	64	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.83	<0.1	<0.02	<0.02	<0.02	0.69	0.22	2.89	<0.02	<0.02	0.89	0.44	<0.05	<0.02	<0.02	62.4
	17 Oct 2018	9	0.25	8.7	-	17.7	-	22	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.55	0.26	<0.01	<0.01	<0.01	0.32	0.12	2	<0.01	<0.01	0.5	0.3	<0.02	<0.02	<0.01	-
		9.2	0.22	8.2	-	17.4	-	23.7	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.52	0.47	<0.01	<0.01	<0.01	0.25	0.12	3.8	<0.01	<0.01	0.46	0.46	<0.02	<0.02	<0.01	-
	04 Dec 2019	8.2	0.19	7.5	-	15.7	-	19.22	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.51	0.2	<0.01	<0.01	<0.01	0.25	0.11	1.5	<0.01	<0.01	0.53	0.23	<0.02	<0.02	<0.01	-
	29 Oct 2020	7.17	0.18	8.23	15.4	15.4	18.4	18.42	<0.05	<0.05	<0.05	<0.05	<0.09	<0.09	<0.03	<0.09	<0.09	<0.03	0.36	<0.2	<0.03	<0.03	<0.03	0.27	0.09	1.47	<0.03	<0.03	0.45	0.20	<0.09	<0.03	<0.03	17.7
	31 Mar 2021	7.19	0.23	10.8	18.0	17.99	21.7	21.68	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.40	0.2	<0.02	<0.02	<0.02	0.39	0.11	1.58	<0.02	<0.02	0.52	0.26	<0.05	<0.02	<0.02	20.8
	18 Aug 2021	7.37	0.24	8.78	16.2	16.15	19.6	19.65	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	0.42	<0.2	<0.05	<0.05	<0.05	0.35	0.13	1.60	<0.05	<0.05	0.52	0.24	<0.12	<0.05	<0.05	18.8
	03 Mar 2022	8.05	0.29	9.00	17.0	-	21.3	-	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	0.51	0.2	<0.02	<0.02	<0.02	0.34	0.14	1.93	<0.02	<0.02	0.53	0.32	<0.06	<0.02	<0.02	20.4
	25 Aug 2022	7.22	0.24	9.83	17.0	-	20.7	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.39	0.1	<0.02	<0.02	<0.02	0.42	0.13	1.59	<0.02	<0.02	0.53	0.25	<0.05	<0.02	<0.02	19.8
	08 Mar 2023	8.87	0.30	12.9	21.8	-	26.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.52	0.2	<0.02	<0.02	<0.02	0.51	0.14	2.13	<0.02	<0.02	0.59	0.35	<0.05	<0.02	<0.02	25.4
	24 Aug 2023	9.73	0.33	9.93	19.7	-	24.5	-	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	0.52	<0.1	<0.02	<0.02	<0.02	0.46	0.17	2.29	<0.02	<0.02	0.73	0.34	<0.06	<0.02	<0.02	23.3
	08 Mar 2024	2.02	0.09	7.54	9.56	-	10.6	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	0.19	0.03	0.42	<0.02	<0.02	0.12	0.10	<0.05	<0.02	<0.02	10.3
	16 Oct 2024	11.6	0.33	10.2	21.8	-	27.5	-	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	0.66	0.2	<0.02	<0.02	<0.02	0.42	0.17	2.73	<0.02	<0.02	0.82	0.38	<0.06	<0.02	<0.02	26.3
MW120	13 Sep 2018	0.15	<0.01	0.021	-	0.171	-	0.208	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.022	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.015	<0.02	<0.02	<0.02	<0.01	-
	12 Jul 2019	0.13	<0.01	0.034	-	0.164	-	0.264	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.086	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	<0.02	<0.02	<0.02	<0.01	-
	29 Oct 2020	0.13	<0.01	0.14	0.27	0.27	0.37	0.37	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.37
	31 Mar 2021	0.16	<0.01	0.12	0.28	0.28	0.52	0.52	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.19	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.49
	18 Aug 2021	0.09	<0.01	0.12	0.21	0.21	0.31	0.31	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.31
	03 Mar 2022	0.07	<0.01	0.12	0.19	-	0.26	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.26
	24 Aug 2022	0.06	<0.01	0.10	0.16	-	0.26	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.26
	08 Mar 2023	0.03	<0.01	0.08	0.11	-	0.14	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.14
	24 Aug 2023	0.04	<0.01	0.12	0.16	-	0.19	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.19
	08 Mar 2024	0.03	<0.01	0.08	0.11	-	0.15	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.15
	16 Oct 2024	0.02	<0.01	0.07	0.09	-	0.12	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

PS129286

		Regulated PFAS Compounds							Other PFAS Compounds																													
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																															
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																															
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																	
Location Code	Date																																				
MW121	13 Sep 2018	0.25	<0.01	0.035	-	0.285	-	0.346	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.033	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.028	<0.02	<0.02	<0.02	<0.01	-
	09 Jul 2019	0.3	<0.01	<0.02	-	0.3	-	0.405	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.063	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.042	<0.02	<0.02	<0.02	<0.01	-
	29 Oct 2020	0.33	<0.01	0.06	0.39	0.39	0.48	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.44
	31 Mar 2021	0.27	<0.01	0.06	0.33	0.33	0.40	0.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.37
	18 Aug 2021	0.28	<0.01	0.06	0.34	0.34	0.42	0.42	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.38
	03 Mar 2022	0.26	<0.01	0.06	0.32	-	0.40	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.36
	24 Aug 2022	0.30	<0.01	0.07	0.37	-	0.45	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.41
	08 Mar 2023	0.42	<0.01	0.08	0.50	-	0.65	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.09	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	0.59
	24 Aug 2023	0.30	<0.01	0.11	0.41	-	0.49	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.45
	08 Mar 2024	0.26	<0.01	0.07	0.33	-	0.41	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.37
	16 Oct 2024	0.64	<0.01	0.04	0.68	-	0.98	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.21	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.09	<0.02	<0.05	<0.02	<0.02	0.89
MW122	26 Sep 2018	1.5	0.11	3.8	-	5.3	-	6.308	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.2	0.15	<0.01	<0.01	<0.01	0.08	0.034	0.2	<0.01	<0.01	0.19	0.044	<0.02	<0.02	<0.01	-
	09 Jul 2019	1.2	0.083	3.1	-	4.3	-	5.102	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.17	0.11	<0.01	<0.01	<0.01	0.065	0.028	0.17	<0.01	<0.01	0.14	0.036	<0.02	<0.02	<0.01	-
	05 Dec 2019	1.5	0.095	3.1	-	4.6	-	5.569	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.19	0.13	<0.01	<0.01	<0.01	0.1	0.03	0.21	<0.01	<0.01	0.17	0.044	<0.02	<0.02	<0.01	-
	29 Oct 2020	0.76	0.05	1.89	2.65	2.65	3.07	3.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.09	<0.02	<0.02	0.10	<0.02	<0.05	<0.02	<0.02	2.92
	31 Mar 2021	0.06	<0.01	0.10	0.16	0.16	0.21	0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.21
	18 Aug 2021	0.39	0.03	0.85	1.24	1.24	1.51	1.51	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.05	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	1.42
	03 Mar 2022	0.79	<0.10	2.20	2.99	-	3.10	-	<0.10	<0.10	<0.10	<0.10	<0.24	<0.24	<0.10	<0.24	<0.24	<0.10	0.11	<0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.24	<0.10	<0.10	3.10
	24 Aug 2022	1.25	0.08	2.88	4.13	-	4.83	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.17	<0.1	<0.02	<0.02	<0.02	0.10	0.02	0.13	<0.02	<0.02	0.17	0.03	<0.05	<0.02	<0.02	4.56
	08 Mar 2023	0.94	0.07	2.37	3.31	-	3.86	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.11	<0.02	<0.02	0.12	0.02	<0.05	<0.02	<0.02	3.67
	24 Aug 2023	1.14	0.10	3.56	4.70	-	5.62	-	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.18	0.1	<0.02	<0.02	<0.02	0.10	0.03	0.15	<0.02	<0.02	0.16	0.04	<0.05	<0.02	<0.02	5.36
	08 Mar 2024	<0.01	<0.01	0.01	0.01	-	0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01
	16 Oct 2024	1.05	0.06	2.78	3.83	-	4.44	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.1	<0.02	<0.02	<0.02	0.08	0.02	0.12	<0.02	<0.02	0.14	0.03	<0.05	<0.02	<0.02	4.22

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

PS129286

		Regulated PFAS Compounds							Other PFAS Compounds																											
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																
Location Code	Date																																			
MW123I	18 Sep 2018	0.2	<0.01	0.096	-	0.296	-	0.586	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.16	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.041	<0.01	<0.01	0.089	<0.02	<0.02	<0.02	<0.01	-
	10 Jul 2019	1.2	<0.01	<0.02	-	1.2	-	2.431	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.55	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.21	<0.01	<0.01	0.43	0.041	<0.02	<0.02	<0.01	-
	05 Dec 2019	1	<0.01	<0.02	-	1	-	1.912	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.4	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.17	<0.01	<0.01	0.31	0.032	<0.02	<0.02	<0.01	-
	28 Oct 2020	0.70	<0.01	<0.01	0.70	0.7	1.38	1.38	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.30	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.13	<0.02	<0.02	0.22	0.03	<0.05	<0.02	<0.02	1.16
	31 Mar 2021	0.37	<0.01	<0.01	0.37	0.37	0.73	0.73	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.17	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	0.12	<0.02	<0.05	<0.02	<0.02	0.61
	18 Aug 2021	0.51	<0.01	<0.01	0.51	0.51	0.98	0.98	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.20	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.09	<0.02	<0.02	0.18	<0.02	<0.05	<0.02	<0.02	0.80
	03 Mar 2022	0.99	<0.01	<0.01	0.99	-	2.20	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.52	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.26	<0.02	<0.02	0.38	0.05	<0.05	<0.02	<0.02	1.82
	24 Aug 2022	0.75	<0.01	<0.01	0.75	-	1.28	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.22	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.11	<0.02	<0.02	0.20	<0.02	<0.05	<0.02	<0.02	1.08
	08 Mar 2023	14.4	0.06	0.04	14.4	-	26.1	-	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	4.21	0.3	<0.02	<0.02	<0.02	0.06	0.17	2.38	<0.02	<0.02	4.04	0.38	<0.05	<0.02	<0.02	22.0
	24 Aug 2023	0.41	<0.01	<0.01	0.41	-	0.83	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.21	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	0.14	<0.02	<0.05	<0.02	<0.02	0.69
	08 Mar 2024	0.59	<0.01	0.01	0.60	-	1.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.24	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	0.14	<0.02	<0.05	<0.02	<0.02	0.92
	16 Oct 2024	0.47	<0.01	<0.01	0.47	-	0.88	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.19	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	0.14	<0.02	<0.05	<0.02	<0.02	0.74
MW123S	18 Sep 2018	9.9	0.59	1.9	-	11.8	-	16.29	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.7	0.23	<0.01	<0.01	<0.01	1	0.16	1	<0.01	<0.01	0.6	0.21	<0.02	<0.02	<0.01	-
	10 Jul 2019	27	0.52	3	-	30	-	36.16	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.94	0.35	<0.01	<0.01	<0.01	0.88	0.32	2	<0.01	<0.01	0.82	0.33	<0.02	<0.02	<0.01	-
	04 Dec 2019	12	0.49	1.4	-	13.4	-	18.05	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.88	0.28	<0.01	<0.01	<0.01	0.84	0.21	1	<0.01	<0.01	0.74	0.21	<0.02	<0.02	<0.01	-
	29 Oct 2020	9.96	0.51	2.64	12.6	12.6	17.4	17.41	<0.05	<0.05	<0.05	<0.05	<0.09	<0.09	<0.03	<0.09	<0.09	<0.03	0.86	0.2	<0.03	<0.03	<0.03	0.99	0.16	1.13	<0.03	<0.03	0.76	0.20	<0.09	<0.03	<0.03	15.7
	31 Mar 2021	17.5	0.88	2.68	20.2	20.18	27.8	27.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	1.03	0.3	<0.02	<0.02	<0.02	2.04	0.31	1.61	<0.02	<0.02	1.02	0.41	<0.05	<0.02	<0.02	24.7
	18 Aug 2021	7.98	0.52	3.24	11.2	11.22	16.0	15.98	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.75	0.2	<0.02	<0.02	<0.02	1.10	0.16	1.05	<0.02	<0.02	0.78	0.20	<0.05	<0.02	<0.02	14.1
	03 Mar 2022	9.43	0.63	6.97	16.4	-	21.0	-	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	0.69	0.2	<0.02	<0.02	<0.02	1.20	0.15	0.90	<0.02	<0.02	0.63	0.17	<0.06	<0.02	<0.02	19.1
	25 Aug 2022	10.2	0.52	4.21	14.4	-	18.8	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.74	0.1	<0.02	<0.02	<0.02	1.02	0.17	0.94	<0.02	<0.02	0.66	0.20	<0.05	<0.02	<0.02	17.1
	08 Mar 2023	6.66	0.37	6.25	12.9	-	16.5	-	<0.09	<0.09	<0.09	<0.09	<0.23	<0.23	<0.09	<0.23	<0.23	<0.09	0.83	<0.5	<0.09	<0.09	<0.09	0.83	<0.09	0.80	<0.09	<0.09	0.60	0.14	<0.23	<0.09	<0.09	15.0
	24 Aug 2023	6.93	0.44	5.08	12.0	-	15.8	-	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	0.78	<0.1	<0.02	<0.02	<0.02	0.81	0.12	0.76	<0.02	<0.02	0.74	0.14	<0.06	<0.02	<0.02	14.2
	08 Mar 2024	1.82	0.09	0.83	2.65	-	3.80	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.30	<0.1	<0.02	<0.02	<0.02	0.12	0.05	0.31	<0.02	<0.02	0.20	0.08	<0.05	<0.02	<0.02	3.48
	16 Oct 2024	5.62	0.31	3.80	9.42	-	13.9	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	1.34	0.2	<0.02	<0.02	<0.02	0.62	0.09	0.87	<0.02	<0.02	0.91	0.16	<0.05	<0.02	<0.02	12.4
Monocell																																				
MW014A	21 Apr 2020	14.8	0.99	10.6	25.4	25.4	36.6	36.61	<0.18	<0.18	<0.18	<0.18	<0.45	<0.45	<0.18	<0.45	<0.45	<0.18	2.52	<0.9	<0.18	<0.18	<0.18	0.86	0.52	3.44	<0.18	<0.18	2.12	0.76	<0.45	<0.18	<0.18	33.6
	02 Mar 2021	15.2	1.44	21.9	37.1	37.1	50.9	50.87	<0.05	<0.05	0.13	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	2.53	0.4	<0.05	<0.05	<0.05	1.46	0.68	3.81	0.18	<0.05	2.32	0.82	<0.12	<0.05	<0.05	46.9
	22 Feb 2022	6.99	0.66	9.91	16.9	-	23.7	-	<0.05	<0.05	0.07	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	1.24	0.2	<0.02	<0.02	<0.02	0.61	0.32	1.94	0.08	<0.02	1.23	0.44	<0.06	<0.02	<0.02	21.8
	27 May 2022	10.2	0.86	12.0	22.2	22.2	31.1	31.12	<0.05	<0.05	0.06	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	1.68	0.3	<0.02	<0.02	<0.02	0.72	0.41	2.47	0.11	<0.02	1.77	0.54	<0.06	<0.02	<0.02	28.5
	12 Jul 2022	11.2	1.02	14.8	26.0	26	35.4	35.44	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	1.86	<0.2	<0.05	<0.05	<0.05	0.86	0.46	2.74	0.10	<0.05	1.90	0.50	<0.12	<0.05	<0.05	32.6
	16 Oct 2024	0.35	0.01	0.26	0.61	-	0.82	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	0.77

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

PS129286

		Regulated PFAS Compounds							Other PFAS Compounds																											
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																
Location Code	Date																																			
MW072	22 Jun 2016	91	6.6	0.55	-	-	-	-	-	<0.01	0.14	<0.01	-	-	<0.05	-	-	<0.05	18	2.1	<0.01	<0.01	<0.01	-	4.1	35	3.2	<0.05	-	5.8	<0.01	<0.01	<0.01	-
	22 Sep 2017	326	10	25.8	352	-	524	-	<0.1	<0.1	<0.1	<0.1	<0.25	<0.25	<0.1	<0.25	<0.25	<0.1	33.5	2.6	<0.1	<0.1	<0.1	8.92	7.37	60	2.89	<0.1	38	8.67	<0.25	<0.1	<0.1	474
	18 Oct 2018	74	3.1	20	-	94	-	124.78	<0.01	<0.01	0.1	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.18	1.2	<0.01	<0.01	<0.01	2.5	1.5	11	2.6	<0.01	6.5	2.1	<0.02	<0.02	<0.01	-
	03 Dec 2019	24	1.2	42	-	66	-	81.494	<0.01	<0.01	0.034	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	2.1	0.55	<0.01	<0.01	<0.01	1.3	0.5	4.8	2.3	<0.01	2	0.71	<0.02	<0.02	<0.01	-
	17 Apr 2020	80.3	5.56	100	180	180.3	249	249.49	<0.05	<0.05	0.31	<0.05	<0.13	<0.13	<0.05	<0.13	<0.13	<0.05	8.70	1.5	<0.05	<0.05	<0.05	9.30	2.19	19.6	5.23	<0.05	13.7	3.10	<0.13	<0.05	<0.05	221
	28 Oct 2020	39.0	2.94	80.7	120	119.7	152	151.98	<0.47	<0.47	<0.47	<0.47	<1.18	<1.18	<0.47	<1.18	<1.18	<0.47	4.55	<2.4	<0.47	<0.47	<0.47	4.50	1.14	8.82	4.17	<0.47	4.55	1.61	<1.18	<0.47	<0.47	139
	02 Mar 2021	50.6	3.94	170	221	220.6	266	265.69	<0.38	<0.38	<0.38	<0.38	<0.96	<0.96	<0.38	<0.96	<0.96	<0.38	7.56	<1.9	<0.38	<0.38	<0.38	6.19	1.64	12.0	5.20	<0.38	6.27	2.29	<0.96	<0.38	<0.38	248
	31 Mar 2021	61.4	4.37	150	211	211.4	258	258.44	<0.42	<0.42	<0.42	<0.42	<1.05	<1.05	<0.42	<1.05	<1.05	<0.42	7.35	<2.1	<0.42	<0.42	<0.42	6.00	1.68	12.9	4.37	<0.42	8.10	2.27	<1.05	<0.42	<0.42	240
	20 Aug 2021	44.9	2.63	82.8	128	127.7	164	164.02	<0.24	<0.24	<0.24	<0.24	<0.60	<0.60	<0.24	<0.60	<0.60	<0.24	5.69	1.4	<0.24	<0.24	<0.24	3.47	1.39	10.1	2.82	<0.24	6.91	1.91	<0.60	<0.24	<0.24	151
	22 Feb 2022	41.5	2.92	126	168	-	204	-	<0.25	<0.25	<0.25	<0.25	<0.62	<0.62	<0.25	<0.62	<0.62	<0.25	5.75	<1.2	<0.25	<0.25	<0.25	4.22	1.35	9.98	4.02	<0.25	6.58	2.05	<0.62	<0.25	<0.25	190
	03 Mar 2022	37.2	2.78	96.0	133	-	165	-	<0.10	<0.10	<0.10	<0.10	<0.25	<0.25	<0.10	<0.25	<0.25	<0.10	5.39	0.8	<0.10	<0.10	<0.10	3.44	1.12	8.68	2.60	<0.10	5.27	1.57	<0.25	<0.10	<0.10	154
	25 Aug 2022	37.2	2.03	60.3	97.5	-	126	-	<0.05	<0.05	0.07	<0.05	<0.09	<0.09	<0.04	<0.09	<0.09	<0.04	5.34	0.3	<0.04	<0.04	<0.04	3.22	1.00	7.80	1.80	<0.04	5.92	1.48	<0.09	<0.04	<0.04	116
	09 Mar 2023	39.8	2.30	76.3	116	-	152	-	<0.10	<0.10	<0.10	<0.10	<0.24	<0.24	<0.10	<0.24	<0.24	<0.10	7.92	0.7	<0.10	<0.10	<0.10	3.24	1.07	10.0	2.27	<0.10	7.03	1.86	<0.24	<0.10	<0.10	140
	25 Aug 2023	39.3	2.07	50.0	89.3	-	119	-	<0.10	<0.10	<0.10	<0.10	<0.24	<0.24	<0.10	<0.24	<0.24	<0.10	5.66	0.7	<0.10	<0.10	<0.10	2.26	0.99	9.73	1.59	<0.10	5.44	1.35	<0.24	<0.10	<0.10	110
	07 Mar 2024	32.1	1.52	42.0	74.1	-	96.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	4.66	0.4	<0.02	<0.02	<0.02	1.72	0.76	6.15	1.16	<0.02	4.90	1.12	<0.05	<0.02	<0.02	88.7
	16 Oct 2024	26.8	1.37	29.6	56.4	-	79.2	-	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	4.83	0.5	<0.05	<0.05	<0.05	1.15	0.75	7.73	0.78	<0.05	4.38	1.27	<0.12	<0.05	<0.05	72.8
MW074	22 Jun 2016	19	2.5	0.12	-	-	-	-	-	<0.01	0.15	<0.01	-	-	<0.05	-	-	<0.05	4.9	0.82	<0.01	<0.01	<0.01	-	1.5	11	1.4	<0.05	-	2.1	<0.01	<0.01	<0.01	-
	14 Sep 2017	69.5	3.62	51.2	121	-	168	-	<0.05	<0.05	0.18	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	9.72	<0.1	<0.02	<0.02	<0.02	4.16	2.02	15	1.53	<0.02	8.32	2.86	<0.05	<0.02	<0.02	154
	13 Oct 2018	40	2.7	32	-	72	-	100.86	<0.01	<0.01	0.16	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	4.1	1.1	<0.01	<0.01	<0.01	1.6	1.3	10	1.7	<0.01	4.1	2.1	<0.02	<0.02	<0.01	-
	12 Jul 2019	53	2.7	53	-	106	-	139.08	<0.01	<0.01	0.19	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	6.5	0.99	<0.01	<0.01	<0.01	2.3	1.3	9.9	1.5	<0.01	5.8	1.9	<0.02	<0.02	<0.01	-
	03 Dec 2019	45	2.5	45	-	90	-	122.33	<0.01	<0.01	0.15	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	5.3	0.98	<0.01	<0.01	<0.01	4.1	1.3	10	1.5	<0.01	4.8	1.7	<0.02	<0.02	<0.01	-
	19 Apr 2020	49.2	2.78	57.6	107	106.8	143	142.78	<0.05	<0.05	0.17	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	4.89	1.0	<0.05	<0.05	<0.05	3.37	1.32	11.2	1.78	<0.05	7.56	1.91	<0.12	<0.05	<0.05	130
	28 Oct 2020	41.1	2.68	47.9	89.0	89	121	121.4	<0.48	<0.48	<0.48	<0.48	<1.20	<1.20	<0.48	<1.20	<1.20	<0.48	5.93	<2.4	<0.48	<0.48	<0.48	2.87	1.48	10.2	1.44	<0.48	5.84	1.96	<1.20	<0.48	<0.48	111
	02 Mar 2021	31.6	1.98	33.0	64.6	64.6	89.3	89.28	<0.07	<0.07	0.11	<0.07	<0.19	<0.19	<0.07	<0.19	<0.19	<0.07	4.35	0.6	<0.07	<0.07	<0.07	2.15	1.06	7.40	1.10	<0.07	4.40	1.53	<0.19	<0.07	<0.07	81.6
	31 Mar 2021	33.4	2.07	41.8	75.2	75.2	98.8	98.75	<0.40	<0.40	<0.40	<0.40	<1.01	<1.01	<0.40	<1.01	<1.01	<0.40	3.89	<2.0	<0.40	<0.40	<0.40	2.03	0.93	7.38	1.05	<0.40	4.62	1.58	<1.01	<0.40	<0.40	91.0
	19 Aug 2021	52.9	3.37	54.2	107	107.1	148	148.29	<0.19	<0.19	0.21	<0.19	<0.48	<0.48	<0.19	<0.48	<0.48	<0.19	6.31	1.4	<0.19	<0.19	<0.19	3.14	1.71	12.8	1.69	<0.19	8.10	2.46	<0.48	<0.19	<0.19	135
	22 Feb 2022	40.7	2.61	39.8	80.5	-	112	-	<0.10	<0.10	0.27	<0.10	<0.25	<0.25	<0.10	<0.25	<0.25	<0.10	5.08	0.9	<0.10	<0.10	<0.10	2.86	1.31	9.83	1.43	<0.10	5.53	2.00	<0.25	<0.10	<0.10	102
	03 Mar 2022	37.6	2.78	45.6	83.2	-	111	-	<0.10	<0.10	<0.10	<0.10	<0.25	<0.25	<0.10	<0.25	<0.25	<0.10	4.85	0.8	<0.10	<0.10	<0.10	2.42	1.15	8.25	1.34	<0.10	4.85	1.59	<0.25	<0.10	<0.10	103
	25 Aug 2022	41.5	2.34	55.0	96.5	-	129	-	<0.05	<0.05	0.14	<0.05	<0.09	<0.09	<0.04	<0.09	<0.09	<0.04	5.95	0.4	<0.04	<0.04	<0.04	3.59	1.18	9.42	1.54	<0.04	6.48	1.82	<0.09	<0.04	<0.04	118
	07 Mar 2023	44.7	2.83	71.7	116	-	155	-	<0.05	<0.05	0.18	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	6.49	1.0	<0.02	<0.02	<0.02	5.70	1.30	9.56	2.05	<0.02	7.74	2.20	<0.05	<0.02	<0.02	140
	09 Mar 2023	41.4	2.85	51.0	92.4	-	126	-	<0.05	<0.05	0.08	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	6.00	0.8	<0.05	<0.05	<0.05	3.33	1.26	9.32	1.81	<0.05	6.14	1.73	<0.12	<0.05	<0.05	114
	25 Aug 2023	51.6	3.18	59.5	111	-	149	-	<0.10	<0.10	0.11	<0.10	<0.25	<0.25	<0.10	<0.25	<0.25	<0.10	6.76	0.7	<0.10	<0.10	<0.10	3.09	1.36	12.5	1.89	<0.10	6.52	1.75	<0.25	<0.10	<0.10	137
	07 Mar 2024	34.5	1.94	38.3	72.8	-	95.6	-	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	4.08	0.4	<0.02	<0.02	<0.02	2.14	0.91	6.51	1.10	<0.02	4.50	1.19	<0.05	<0.02	<0.02	87.9
	16 Oct 2024	37.8	2.57	47.5	85.3	-	118	-	<0.05	<0.05	0.11	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	5.59	0.8	<0.05	<0.05	<0.05	2.64	1.10	11.0	1.52	<0.05	6.23	1.72	<0.12	<0.05	<0.05	108

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																												
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																															
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																															
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																	
Location Code	Date																																				
MW077	07 Mar 2023	0.46	<0.02	0.58	1.04	-	1.34	-	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.10	<0.02	<0.02	0.07	<0.02	<0.06	<0.02	<0.02	1.27
	16 Oct 2024	0.31	0.03	0.66	0.97	-	1.22	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	1.17
MW106	31 Aug 2018	0.12	<0.01	0.087	-	0.207	-	0.266	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.041	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
		0.14	<0.01	0.093	-	0.233	-	0.366	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.042	0.065	<0.01	<0.01	<0.01	<0.01	<0.01	0.026	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	12 Jul 2019	0.098	<0.01	0.043	-	0.141	-	0.195	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.04	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	03 Dec 2019	0.2	<0.01	0.08	-	0.28	-	0.369	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.041	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.031	<0.01	<0.01	0.017	<0.02	<0.02	<0.02	<0.01	-
	28 Oct 2020	0.12	<0.01	0.09	0.21	0.21	0.28	0.28	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.28
	31 Mar 2021	0.07	<0.01	0.05	0.12	0.12	0.20	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.20
	18 Aug 2021	0.25	<0.01	0.10	0.35	0.35	0.48	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.45
	03 Mar 2022	0.12	<0.01	0.05	0.17	-	0.23	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.23
	25 Aug 2022	0.16	<0.01	0.09	0.25	-	0.37	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.09	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.37
	09 Mar 2023	0.35	0.01	0.18	0.53	-	0.79	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.75
	25 Aug 2023	0.32	0.01	0.40	0.72	-	0.82	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.08	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.79
	07 Mar 2024	0.06	<0.01	0.08	0.14	-	0.19	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.19
	16 Oct 2024	0.07	<0.01	0.07	0.14	-	0.19	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.19
MW349	08 Jun 2022	21.9	1.50	41.3	63.2	63.2	79.8	79.82	<0.05	<0.05	<0.05	<0.05	<0.11	<0.11	<0.04	<0.11	<0.11	<0.04	2.69	0.4	<0.04	<0.04	<0.04	1.66	0.73	4.75	0.87	<0.04	3.11	0.91	<0.11	<0.04	<0.04	74.2
	12 Jul 2022	21.7	1.52	33.2	54.9	54.9	70.7	70.69	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	2.55	0.3	<0.05	<0.05	<0.05	1.56	0.62	4.48	0.87	<0.05	3.13	0.76	<0.12	<0.05	<0.05	65.1
	16 Oct 2024	24.4	1.60	24.2	48.6	-	70.0	-	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	3.60	0.5	<0.05	<0.05	<0.05	1.74	0.77	7.53	0.71	<0.05	3.78	1.18	<0.12	<0.05	<0.05	63.8
Stockpile Designated Area 2																																					
MW141	15 Oct 2018	2.7	0.069	0.76	-	3.46	-	5.504	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.37	0.19	<0.01	<0.01	<0.01	0.059	0.046	0.86	<0.01	<0.01	0.3	0.15	<0.02	<0.02	<0.01	-
	16 Oct 2018	3.1	0.097	0.87	-	3.97	-	6.03	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.42	0.13	<0.01	<0.01	<0.01	0.076	0.047	0.81	<0.01	<0.01	0.34	0.14	<0.02	<0.02	<0.01	-
	12 Jul 2019	2.3	0.081	0.72	-	3.02	-	4.737	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.34	0.11	<0.01	<0.01	<0.01	0.066	0.041	0.67	0.019	<0.01	0.28	0.11	<0.02	<0.02	<0.01	-
	03 Dec 2019	1.6	0.054	0.58	-	2.18	-	3.371	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.23	0.11	<0.01	<0.01	<0.01	0.054	0.025	0.44	<0.01	<0.01	0.2	0.078	<0.02	<0.02	<0.01	-
	28 Oct 2020	1.68	0.07	0.64	2.32	2.32	3.58	3.58	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.27	<0.1	<0.02	<0.02	<0.02	0.07	0.03	0.49	<0.02	<0.02	0.24	0.09	<0.05	<0.02	<0.02	3.27
	31 Mar 2021	1.61	0.07	0.77	2.38	2.38	3.56	3.56	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.22	<0.1	<0.02	<0.02	<0.02	0.07	0.04	0.48	<0.02	<0.02	0.20	0.10	<0.05	<0.02	<0.02	3.29
	17 Aug 2021	0.78	0.04	0.37	1.15	1.15	1.73	1.73	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.23	<0.02	<0.02	0.10	0.05	<0.05	<0.02	<0.02	1.60
	03 Mar 2022	1.06	0.05	0.51	1.57	-	2.33	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.17	<0.1	<0.02	<0.02	<0.02	0.05	0.02	0.28	<0.02	<0.02	0.14	0.05	<0.05	<0.02	<0.02	2.14
	24 Aug 2022	1.12	0.04	0.52	1.64	-	2.37	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.17	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.28	<0.02	<0.02	0.15	0.05	<0.05	<0.02	<0.02	2.18
	09 Mar 2023	0.96	0.04	0.44	1.40	-	2.07	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.19	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.23	<0.02	<0.02	0.13	0.04	<0.05	<0.02	<0.02	1.90
	25 Aug 2023	0.84	0.03	0.42	1.26	-	1.76	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.19	<0.02	<0.02	0.09	0.02	<0.05	<0.02	<0.02	1.64
	07 Mar 2024	0.52	0.02	0.28	0.80	-	1.09	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.09	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.10	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	1.01
	16 Oct 2024	0.44	0.03	0.27	0.71	-	1.11	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.16	<0.02	<0.02	0.06	0.03	<0.05	<0.02	<0.02	1.03

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

PS129286

		Regulated PFAS Compounds							Other PFAS Compounds																											
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																
Location Code	Date																																			
Suspected Aqueous Film Forming Foam (AFFF) Disposal Area																																				
MW101	20 Sep 2018	0.2	0.016	0.64	-	0.84	-	0.984	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.057	<0.05	<0.01	<0.01	<0.01	0.011	<0.01	0.042	<0.01	<0.01	0.018	<0.02	<0.02	<0.02	<0.01	-
		0.23	0.012	0.57	-	0.8	-	1.295	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.058	0.081	<0.01	<0.01	<0.01	0.012	<0.01	0.26	<0.01	<0.01	0.017	0.055	<0.02	<0.02	<0.01	-
	10 Jul 2019	0.28	0.01	0.53	-	0.81	-	1.018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.13	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.033	<0.01	<0.01	0.035	<0.02	<0.02	<0.02	<0.01	-
	03 Dec 2019	0.36	0.018	0.62	-	0.98	-	1.191	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.086	<0.05	<0.01	<0.01	<0.01	0.011	0.01	0.051	<0.01	<0.01	0.035	<0.02	<0.02	<0.02	<0.01	-
	29 Oct 2020	0.80	0.04	1.27	2.07	2.07	2.63	2.63	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.20	<0.1	<0.02	<0.02	<0.02	0.04	0.02	0.13	<0.02	<0.02	0.10	0.03	<0.05	<0.02	<0.02	2.49
	31 Mar 2021	0.34	0.02	0.34	0.68	0.68	1.17	1.17	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.26	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	1.09
	18 Aug 2021	0.60	0.03	0.67	1.27	1.27	1.78	1.78	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.26	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.09	<0.02	<0.02	0.10	<0.02	<0.05	<0.02	<0.02	1.65
	03 Mar 2022	0.42	0.02	0.37	0.79	-	1.41	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.41	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	0.12	<0.02	<0.05	<0.02	<0.02	1.29
	24 Aug 2022	0.53	0.01	0.37	0.90	-	1.55	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.43	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	0.14	<0.02	<0.05	<0.02	<0.02	1.41
	09 Mar 2023	0.15	<0.01	0.20	0.35	-	0.56	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.53
	24 Aug 2023	0.35	0.02	0.69	1.04	-	1.34	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	1.28
	07 Mar 2024	0.01	<0.01	0.03	0.04	-	0.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06
Top, Middle and Lower Dams																																				
MW138	10 Oct 2018	5.5	0.29	4.6	-	10.1	-	14.597	<0.01	<0.01	0.02	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.99	0.21	<0.01	<0.01	<0.01	0.24	0.16	1.3	0.047	<0.01	0.98	0.26	<0.02	<0.02	<0.01	-
		5.8	0.34	4.5	-	10.3	-	15.701	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.88	0.43	<0.01	<0.01	<0.01	0.21	0.16	2.2	0.041	<0.01	0.73	0.41	<0.02	<0.02	<0.01	-
	29 Oct 2020	6.19	0.29	7.60	13.8	13.79	18.6	18.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.88	0.2	<0.02	<0.02	<0.02	0.35	0.20	1.46	0.04	<0.02	1.10	0.29	<0.05	<0.02	<0.02	17.1
	31 Mar 2021	6.15	0.37	8.81	15.0	14.96	19.7	19.73	<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.04	<0.10	<0.10	<0.04	0.90	0.2	<0.04	<0.04	<0.04	0.42	0.19	1.41	0.04	<0.04	0.95	0.29	<0.10	<0.04	<0.04	18.3
	18 Aug 2021	6.01	0.40	6.91	12.9	12.92	17.8	17.81	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.94	0.2	<0.02	<0.02	<0.02	0.39	0.20	1.50	0.04	<0.02	0.96	0.26	<0.05	<0.02	<0.02	16.4
	03 Mar 2022	5.17	0.34	7.09	12.3	-	16.4	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.88	0.1	<0.02	<0.02	<0.02	0.40	0.19	1.21	0.04	<0.02	0.77	0.22	<0.05	<0.02	<0.02	15.2
	24 Aug 2022	5.03	0.32	6.04	11.1	-	15.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.80	0.1	<0.02	<0.02	<0.02	0.38	0.18	1.17	0.04	<0.02	0.85	0.24	<0.05	<0.02	<0.02	13.9
	09 Mar 2023	6.75	0.43	8.75	15.5	-	21.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	1.30	0.2	<0.02	<0.02	<0.02	0.64	0.22	1.62	0.05	<0.02	1.18	0.33	<0.05	<0.02	<0.02	19.6
	24 Aug 2023	6.03	0.43	8.33	14.4	-	19.2	-	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	0.89	<0.1	<0.02	<0.02	<0.02	0.46	0.20	1.44	0.04	<0.02	1.03	0.31	<0.06	<0.02	<0.02	17.6
	07 Mar 2024	5.37	0.36	7.51	12.9	-	17.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.93	0.1	<0.02	<0.02	<0.02	0.44	0.19	1.19	0.04	<0.02	0.85	0.25	<0.05	<0.02	<0.02	15.9
	16 Oct 2024	5.34	0.47	6.18	11.5	-	17.8	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	1.21	0.2	<0.02	<0.02	<0.02	0.46	0.24	2.24	0.06	<0.02	1.08	0.37	<0.05	<0.02	<0.02	16.2

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

PS129286

		Regulated PFAS Compounds							Other PFAS Compounds																											
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																
Location Code	Date																																			
Base Boundary - On-base																																				
MW002	13 Sep 2017	1.38	0.04	0.92	2.3	-	2.82	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.2	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.13	<0.02	<0.02	0.12	<0.02	<0.05	<0.02	<0.02	2.67
	16 Oct 2018	1.3	0.042	0.92	-	2.22	-	3.016	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.17	0.11	<0.01	<0.01	<0.01	0.027	0.023	0.25	0.021	<0.01	0.092	0.061	<0.02	<0.02	<0.01	-
		1.4	0.041	0.94	-	2.34	-	3.283	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.16	0.14	<0.01	<0.01	<0.01	0.024	0.02	0.39	0.014	<0.02	0.084	0.07	<0.02	<0.02	<0.01	-
	10 Jul 2019	0.77	0.022	2.3	-	3.07	-	3.333	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.075	<0.05	<0.01	<0.01	<0.01	0.024	<0.01	0.061	0.022	<0.01	0.042	<0.02	<0.02	<0.02	0.017	-
	05 Dec 2019	1.5	0.014	0.81	-	2.31	-	2.66	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.099	0.074	<0.01	<0.01	<0.01	0.039	<0.01	0.031	<0.01	<0.01	0.093	<0.02	<0.02	<0.02	<0.01	-
	19 Apr 2020	1.14	0.04	2.04	3.18	3.18	3.65	3.65	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.14	0.04	<0.02	0.08	0.03	<0.05	<0.02	<0.02	3.47
	28 Oct 2020	0.44	0.02	0.79	1.23	1.23	1.41	1.41	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	1.38
	02 Mar 2021	1.32	0.06	2.88	4.20	4.2	4.79	4.79	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	0.08	0.02	0.17	0.06	<0.02	0.07	0.03	<0.05	<0.02	<0.02	4.58
	31 Mar 2021	2.19	0.06	2.72	4.91	4.91	5.61	5.61	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	0.09	0.02	0.18	0.05	<0.02	0.13	0.03	<0.05	<0.02	<0.02	5.34
	19 Aug 2021	1.25	0.02	1.28	2.53	2.53	2.88	2.88	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.06	<0.02	<0.02	0.11	<0.02	<0.05	<0.02	<0.02	2.72
	21 Feb 2022	0.82	0.03	1.26	2.08	-	2.43	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.09	0.03	<0.02	0.06	0.02	<0.05	<0.02	<0.02	2.30
	03 Mar 2022	0.74	0.03	1.46	2.20	-	2.46	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.07	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	2.38
	25 Aug 2022	0.53	0.01	0.82	1.35	-	1.52	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	1.45
	08 Mar 2023	1.93	0.06	3.16	5.09	-	5.89	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.17	<0.1	<0.02	<0.02	<0.02	0.09	0.02	0.20	0.07	<0.02	0.13	0.04	<0.05	<0.02	0.02	5.58
	24 Aug 2023	0.61	<0.01	0.78	1.39	-	1.57	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.09	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	1.51
	08 Mar 2024	0.89	0.03	1.87	2.76	-	3.10	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.08	0.04	<0.02	0.05	<0.02	<0.05	<0.02	0.02	2.95
	16 Oct 2024	1.26	0.01	0.91	2.17	-	2.49	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.02	<0.02	<0.02	0.12	<0.02	<0.05	<0.02	<0.02	2.31
MW003	04 Oct 2017	<0.02	<0.01	0.04	0.04	-	0.04	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04
	08 Oct 2018	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	16 Oct 2018	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
		<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	12 Jul 2019	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	23 Apr 2020	0.40	0.02	0.87	1.27	1.27	2.08	2.08	<0.05	<0.05	0.65	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.07	<0.02	<0.02	0.02	0.02	<0.05	<0.02	<0.02	2.03
	29 Oct 2020	0.03	<0.01	0.06	0.09	0.09	0.09	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09
	02 Mar 2021	<0.02	<0.01	0.02	0.02	0.02	0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02
	31 Mar 2021	<0.02	<0.01	0.04	0.04	0.04	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04
	18 Aug 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	22 Feb 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	03 Mar 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	24 Aug 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	08 Mar 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	24 Aug 2023	<0.01	<0.01	<0.01	<0.01	-	0.18	-	<0.05	<0.05	0.18	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.18
	08 Mar 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	16 Oct 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																											
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																
Location Code	Date																																			
MW118	03 Sep 2018	0.045	<0.01	<0.02	-	0.045	-	0.084	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.039	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	11 Jul 2019	0.037	<0.01	<0.02	-	0.037	-	0.211	<0.01	<0.01	0.11	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.036	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.028	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	28 Oct 2020	0.04	<0.01	0.01	0.05	0.05	0.09	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09
	30 Mar 2021	0.04	<0.01	<0.02	0.04	0.04	0.09	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09
	17 Aug 2021	0.04	<0.01	<0.01	0.04	0.04	0.10	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.10
	18 Feb 2022	0.03	<0.01	<0.01	0.03	-	0.07	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07
	24 Aug 2022	0.03	<0.01	<0.01	0.03	-	0.08	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.08
	09 Mar 2023	0.03	<0.01	0.01	0.04	-	0.12	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12
	25 Aug 2023	0.04	<0.01	0.07	0.11	-	0.37	-	<0.05	<0.05	0.20	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.37
	07 Mar 2024	0.02	<0.01	<0.01	0.02	-	0.07	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07
	16 Oct 2024	0.03	<0.01	<0.01	0.03	-	0.10	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.10
MW119	03 Sep 2018	0.024	<0.01	0.78	-	0.804	-	1.078	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.033	<0.05	<0.01	<0.01	<0.01	<0.01	0.039	0.092	<0.01	<0.01	<0.01	0.11	<0.02	<0.02	<0.01	-
	11 Jul 2019	0.033	0.031	<0.02	-	0.033	-	0.753	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.084	0.11	<0.01	<0.01	<0.01	<0.01	0.093	0.2	<0.01	<0.01	0.012	0.19	<0.02	<0.02	<0.01	-
	05 Dec 2019	0.04	0.038	<0.02	-	0.04	-	0.927	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.1	0.075	<0.01	<0.01	<0.01	<0.01	0.13	0.26	<0.01	<0.01	0.014	0.27	<0.02	<0.02	<0.01	-
	28 Oct 2020	0.04	0.05	<0.01	0.04	0.04	0.75	0.75	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	<0.02	0.11	0.20	<0.02	<0.02	<0.02	0.22	<0.05	<0.02	<0.02	0.75
	30 Mar 2021	0.03	0.06	<0.01	0.03	0.03	0.63	0.63	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	0.09	0.15	<0.02	<0.02	<0.02	0.16	<0.05	<0.02	<0.02	0.63
	17 Aug 2021	0.05	0.10	<0.01	0.05	0.05	1.08	1.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.23	0.1	<0.02	<0.02	<0.02	<0.02	0.15	0.23	<0.02	<0.02	<0.02	0.22	<0.05	<0.02	<0.02	1.08
	18 Feb 2022	0.06	0.11	<0.02	0.06	-	1.19	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.29	0.1	<0.02	<0.02	<0.02	<0.02	0.16	0.24	<0.02	<0.02	<0.02	0.23	<0.05	<0.02	<0.02	1.19
	24 Aug 2022	0.05	0.11	0.02	0.07	-	0.91	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.27	<0.1	<0.02	<0.02	<0.02	<0.02	0.13	0.17	<0.02	<0.02	<0.02	0.16	<0.05	<0.02	<0.02	0.91
	07 Mar 2023	0.06	0.13	0.04	0.10	-	1.13	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.36	<0.1	<0.02	<0.02	<0.02	<0.02	0.15	0.19	<0.02	<0.02	<0.02	0.20	<0.05	<0.02	<0.02	1.13
	25 Aug 2023	0.06	0.15	0.05	0.11	-	1.20	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.31	0.1	<0.02	<0.02	<0.02	<0.02	0.14	0.21	<0.02	<0.02	<0.02	0.18	<0.05	<0.02	<0.02	1.20
	08 Mar 2024	0.05	0.14	0.04	0.09	-	1.00	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.34	<0.1	<0.02	<0.02	<0.02	<0.02	0.14	0.13	<0.02	<0.02	<0.02	0.16	<0.05	<0.02	<0.02	1.00
	16 Oct 2024	0.05	0.14	0.04	0.09	-	1.30	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.41	0.1	<0.02	<0.02	<0.02	<0.02	0.14	0.22	<0.02	<0.02	<0.02	0.20	<0.05	<0.02	<0.02	1.30
MW124	12 Jul 2019	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	02 Nov 2020	<0.02	<0.01	0.01	0.01	0.01	0.18	0.18	<0.05	<0.05	0.17	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.18
	31 Mar 2021	<0.25	<0.25	<0.25	<0.25	0	<0.25	0	<0.25	<0.25	<0.25	<0.25	<0.62	<0.62	<0.25	<0.62	<0.62	<0.25	<0.25	<1.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.25	<0.25
	17 Aug 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	02 Mar 2022	<0.02	<0.02	<0.02	<0.02	-	<0.02	-	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02
	24 Aug 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	08 Mar 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	24 Aug 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	08 Mar 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	16 Oct 2024	<0.01	<0.01	0.02	0.02	-	0.02	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																											
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																
Location Code	Date																																			
MW125I	26 Sep 2018	0.13	<0.01	<0.02	-	0.13	-	0.193	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.036	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.017	<0.02	<0.02	<0.02	<0.01	-
	11 Jul 2019	0.18	<0.01	0.028	-	0.208	-	0.304	<0.01	<0.01	0.012	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.037	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.026	<0.01	<0.01	0.021	<0.02	<0.02	<0.02	<0.01	-
	02 Nov 2020	0.17	<0.01	0.04	0.21	0.21	0.42	0.42	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.39
	31 Mar 2021	0.18	<0.01	0.05	0.23	0.23	0.32	0.32	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.30
	17 Aug 2021	0.19	<0.01	0.03	0.22	0.22	0.34	0.34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.31
	02 Mar 2022	0.18	<0.01	0.03	0.21	-	0.32	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.29
	24 Aug 2022	0.15	<0.01	0.03	0.18	-	0.24	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.24
	08 Mar 2023	0.13	<0.01	0.02	0.15	-	0.23	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.21
	24 Aug 2023	0.15	<0.01	0.02	0.17	-	0.24	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.24
	08 Mar 2024	0.41	<0.01	0.02	0.43	-	0.67	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.09	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.09	<0.02	<0.02	0.04	0.02	<0.05	<0.02	<0.02	0.63
	16 Oct 2024	1.06	0.02	0.01	1.07	-	2.12	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.24	<0.1	<0.02	<0.02	<0.02	<0.02	0.02	0.51	<0.02	<0.02	0.18	0.08	<0.05	<0.02	<0.02	1.94
MW125S	18 Sep 2018	0.3	<0.01	<0.02	-	0.3	-	0.435	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.085	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	<0.02	<0.02	<0.02	<0.01	-
	11 Jul 2019	0.21	<0.01	<0.02	-	0.21	-	0.344	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.051	0.061	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.022	<0.02	<0.02	<0.02	<0.01	-
	02 Nov 2020	0.24	<0.01	0.02	0.26	0.26	0.75	0.75	<0.05	<0.05	0.41	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.72
	31 Mar 2021	0.21	<0.01	<0.01	0.21	0.21	0.29	0.29	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.26
	17 Aug 2021	0.96	0.01	<0.01	0.96	0.96	1.97	1.97	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.27	<0.1	<0.02	<0.02	<0.02	<0.02	0.02	0.43	<0.02	<0.02	0.19	0.09	<0.05	<0.02	<0.02	1.78
	02 Mar 2022	1.36	0.02	0.01	1.37	-	3.19	-	<0.05	<0.05	0.50	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.38	<0.1	<0.02	<0.02	<0.02	<0.02	0.03	0.54	<0.02	<0.02	0.24	0.11	<0.05	<0.02	<0.02	2.95
	24 Aug 2022	0.68	0.01	0.02	0.70	-	1.17	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.21	<0.02	<0.02	0.08	0.05	<0.05	<0.02	<0.02	1.09
	08 Mar 2023	0.58	0.01	0.02	0.60	-	0.89	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.11	<0.02	<0.02	0.05	0.02	<0.05	<0.02	<0.02	0.84
	24 Aug 2023	2.28	0.04	0.03	2.31	-	3.83	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.37	<0.1	<0.02	<0.02	<0.02	<0.02	0.04	0.75	<0.02	<0.02	0.22	0.10	<0.05	<0.02	<0.02	3.61
	08 Mar 2024	3.82	0.08	0.04	3.86	-	6.11	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.59	<0.1	<0.02	<0.02	<0.02	0.02	0.09	0.87	<0.02	<0.02	0.43	0.17	<0.05	<0.02	<0.02	5.66
	16 Oct 2024	4.05	0.11	0.05	4.10	-	7.71	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.72	<0.1	<0.02	<0.02	<0.02	0.04	0.09	1.81	<0.02	<0.02	0.61	0.23	<0.05	<0.02	<0.02	7.06
Off-Base																																				
MW205S	12 Sep 2018	0.023	<0.01	<0.02	-	0.023	-	0.023	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	08 Jul 2019	0.023	<0.01	<0.02	-	0.023	-	0.023	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	03 Nov 2020	0.02	<0.01	0.02	0.04	0.04	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04
	31 Mar 2021	0.02	<0.01	0.02	0.04	0.04	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04
	19 Aug 2021	0.02	<0.01	0.02	0.04	0.04	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04
	03 Mar 2022	0.02	<0.01	0.02	0.04	-	0.04	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04
	24 Aug 2022	0.03	<0.01	0.02	0.05	-	0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05
	08 Mar 2023	0.03	<0.01	0.03	0.06	-	0.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06
	24 Aug 2023	0.03	<0.01	0.03	0.06	-	0.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06
	07 Mar 2024	0.02	<0.01	0.02	0.04	-	0.04	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04
	16 Oct 2024	0.01	<0.01	0.02	0.03	-	0.03	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

PS129286

		Regulated PFAS Compounds							Other PFAS Compounds																											
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																
Location Code	Date																																			
MW212	11 Sep 2018	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	03 Nov 2020	<0.02	<0.01	<0.01	<0.01	0	0.06	0.06	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06
	31 Mar 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.07	<0.05	<0.02	<0.02	<0.01
	18 Aug 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	03 Mar 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	24 Aug 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	07 Mar 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	24 Aug 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	07 Mar 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	16 Oct 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
MW217	11 Sep 2018	0.014	<0.01	<0.02	-	0.014	-	0.014	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	09 Jul 2019	0.013	<0.01	<0.02	-	0.013	-	0.013	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	03 Nov 2020	<0.02	<0.02	<0.02	<0.02	0	<0.02	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02
	31 Mar 2021	<0.04	<0.04	<0.04	<0.04	0	<0.04	0	<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.04	<0.10	<0.10	<0.04	<0.04	<0.20	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.04
	18 Aug 2021	<0.10	<0.10	<0.10	<0.10	0	<0.10	0	<0.10	<0.10	<0.10	<0.10	<0.25	<0.25	<0.10	<0.25	<0.25	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10
	03 Mar 2022	0.02	<0.01	0.08	0.10	-	0.16	-	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.16
	22 Apr 2022	0.01	<0.01	<0.01	0.01	-	0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01
	24 Aug 2022	0.01	<0.01	<0.01	0.01	-	0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01
	08 Mar 2023	0.01	<0.01	0.02	0.03	-	0.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06
	24 Aug 2023	0.01	<0.01	<0.02	0.01	-	0.04	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04
	07 Mar 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	16 Oct 2024	0.01	<0.01	0.01	0.02	-	0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05
MW220S	12 Sep 2018	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	06 Dec 2019	0.38	<0.01	<0.02	-	0.38	-	0.551	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.085	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.021	<0.01	<0.01	0.065	<0.02	<0.02	<0.02	<0.01	-
	03 Nov 2020	0.64	<0.01	0.04	0.68	0.68	1.32	1.32	<0.05	<0.05	0.32	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.13	<0.02	<0.05	<0.02	<0.02	1.19
	01 Apr 2021	1.04	<0.01	0.05	1.09	1.09	1.63	1.63	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.29	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.23	<0.02	<0.05	<0.02	<0.02	1.40
	18 Aug 2021	0.50	<0.01	0.02	0.52	0.52	0.82	0.82	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.12	<0.02	<0.05	<0.02	<0.02	0.70
	03 Mar 2022	0.47	<0.01	0.01	0.48	-	0.69	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	0.61
	24 Aug 2022	0.13	<0.01	<0.01	0.13	-	0.19	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.17
	07 Mar 2023	0.68	<0.01	0.02	0.70	-	1.03	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.20	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.13	<0.02	<0.05	<0.02	<0.02	0.90
	24 Aug 2023	0.69	<0.01	0.03	0.72	-	0.98	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.17	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.09	<0.02	<0.05	<0.02	<0.02	0.89
	07 Mar 2024	0.28	<0.01	0.02	0.30	-	0.46	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	0.41
	16 Oct 2024	0.32	<0.01	0.02	0.34	-	0.55	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	0.47

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																											
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																
Location Code	Date																																			
MW226	29 Nov 2017	0.53	0.017	0.27	-	0.8	-	1.014	-	-	<0.01	<0.01	<0.02	<0.05	-	<0.02	<0.05	-	0.096	<0.05	-	<0.01	<0.01	0.01	<0.01	0.072	0.019	<0.01	-	<0.02	<0.02	<0.02	<0.01	-
	09 Aug 2018	0.059	<0.01	0.093	-	0.152	-	0.176	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.024	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	04 Dec 2019	0.048	<0.01	0.079	-	0.127	-	0.166	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.029	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.02	<0.02	<0.02	<0.01	-
	29 Oct 2020	0.26	<0.01	0.16	0.42	0.42	0.56	0.56	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.52
	30 Mar 2021	0.05	<0.01	0.03	0.08	0.08	0.11	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11
	19 Aug 2021	0.43	<0.01	0.11	0.54	0.54	0.86	0.86	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.15	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	0.07	0.02	<0.05	<0.02	<0.02	0.79
	02 Mar 2022	0.32	<0.01	0.09	0.41	-	0.69	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	0.63
	25 Aug 2022	0.26	<0.01	0.04	0.30	-	0.56	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	0.50
	08 Mar 2023	0.20	<0.01	0.05	0.25	-	0.41	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.38
	24 Aug 2023	0.65	<0.01	0.07	0.72	-	1.09	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.18	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.11	<0.02	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	1.01
	08 Mar 2024	0.06	<0.01	0.01	0.07	-	0.13	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.13
	16 Oct 2024	0.12	<0.01	0.02	0.14	-	0.33	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	0.28
MW232	12 Sep 2018	0.077	<0.01	0.085	-	0.162	-	0.198	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.036	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	09 Jul 2019	0.11	<0.01	0.099	-	0.209	-	0.298	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.066	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	0.011	<0.02	<0.02	<0.02	<0.01	-
	06 Dec 2019	0.095	<0.01	0.099	-	0.194	-	0.247	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.032	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	0.01	<0.02	<0.02	<0.02	<0.01	-
	03 Nov 2020	0.10	<0.10	0.17	0.27	0.27	0.40	0.4	<0.10	<0.10	0.13	<0.10	<0.25	<0.25	<0.10	<0.25	<0.25	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	0.40
	31 Mar 2021	0.09	<0.01	0.10	0.19	0.19	0.34	0.34	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.15	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.34
	20 Aug 2021	0.09	<0.04	0.06	0.15	0.15	0.20	0.2	<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.04	<0.10	<0.10	<0.04	0.05	<0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	0.20
	03 Mar 2022	0.09	<0.01	0.10	0.19	-	0.36	-	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.36
	24 Aug 2022	0.09	<0.01	0.07	0.16	-	0.30	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.30
	09 Mar 2023	0.12	<0.01	0.13	0.25	-	0.42	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.17	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.42
	24 Aug 2023	0.10	<0.01	0.17	0.27	-	0.34	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.34
	07 Mar 2024	0.06	<0.01	0.10	0.16	-	0.28	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.28
	16 Oct 2024	0.07	<0.01	0.11	0.18	-	0.24	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.24
MW233	11 Sep 2018	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	11 Jul 2019	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	06 Dec 2019	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	03 Nov 2020	<0.02	<0.01	<0.01	<0.01	0	0.15	0.15	<0.05	<0.05	0.15	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.15
	31 Mar 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	18 Aug 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	03 Mar 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	24 Aug 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	07 Mar 2023	<0.01	<0.01	0.02	0.02	-	0.02	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02
	24 Aug 2023	0.04	<0.01	0.08	0.12	-	0.12	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12
	07 Mar 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	16 Oct 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01

Table 7
Historical Groundwater Analytical Results
Lavarack Barracks

PS129286

		Regulated PFAS Compounds							Other PFAS Compounds																													
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.01	0.01	0.01	0.01		0.01		0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																																
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																																
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																		
Location Code	Date																																					
MW235S	10 Sep 2018	0.019	<0.01	<0.02	-	0.019	-	0.034	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.015	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	08 Jul 2019	<0.01	<0.01	<0.02	-	0	-	0.04	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.04	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	03 Nov 2020	<0.02	<0.01	0.02	0.02	0.02	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.05
	31 Mar 2021	<0.02	<0.01	<0.01	<0.01	0	0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.02
	18 Aug 2021	0.03	<0.02	0.12	0.15	0.15	0.18	0.18	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	0.18
	03 Mar 2022	<0.02	<0.02	<0.02	<0.02	-	<0.02	-	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.02
	25 Aug 2022	0.01	<0.01	<0.01	0.01	-	0.04	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.04
	08 Mar 2023	<0.10	<0.10	<0.10	<0.10	-	<0.10	-	<0.10	<0.10	<0.10	<0.10	<0.24	<0.24	<0.10	<0.24	<0.24	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.24	<0.10	<0.10	<0.10	<0.10
	24 Aug 2023	<0.01	<0.01	<0.01	<0.01	-	0.04	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.04
	07 Mar 2024	<0.01	<0.01	<0.01	<0.01	-	0.02	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	0.02
MW236S	11 Sep 2018	0.32	0.016	0.33	-	0.65	-	0.804	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.068	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.036	<0.01	<0.01	0.034	<0.02	<0.02	<0.02	<0.01	-
	08 Jul 2019	0.11	<0.01	0.14	-	0.25	-	0.316	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.044	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	0.011	<0.02	<0.02	<0.02	<0.01	-
	05 Dec 2019	0.17	<0.01	0.18	-	0.35	-	0.427	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.054	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.023	<0.02	<0.02	<0.02	<0.01	-
	03 Nov 2020	0.21	0.01	0.16	0.37	0.37	0.49	0.49	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.46
	31 Mar 2021	0.08	<0.01	0.09	0.17	0.17	0.20	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.20
	19 Aug 2021	0.16	<0.04	0.15	0.31	0.31	0.36	0.36	<0.05	<0.05	<0.05	<0.05	<0.11	<0.11	<0.04	<0.11	<0.11	<0.04	0.05	<0.2	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.11	<0.04	<0.04	0.36
	04 Mar 2022	0.24	0.01	0.25	0.49	-	0.58	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.56
	24 Aug 2022	0.08	0.01	0.19	0.27	-	0.32	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.32
	08 Mar 2023	0.11	<0.01	0.17	0.28	-	0.36	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.36
	24 Aug 2023	0.05	<0.01	0.09	0.14	-	0.18	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.18
	07 Mar 2024	0.12	<0.01	0.12	0.24	-	0.32	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.32
	16 Oct 2024	0.15	<0.01	0.20	0.35	-	0.43	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.41

Note:
* = Drinking water guidelines apply only to Off-Base groundwater results.
** = Recreation guidelines apply to On-Base and Off-Base groundwater results.
*** = Ecological guidelines do not apply to On-Base or Off Base groundwater results.

Table 8
Historical Surface Water Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																													
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.001	0.001	0.002	0.01		0.01		0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.002	0.005	0.002	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001	0.01	
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																																
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																																
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																		
Location Code	Date																																					
Eastern PFAS Contamination Area																																						
SW119	16 Dec 2018	0.36	0.04	0.88	-	1.24	-	1.558	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.061	<0.05	<0.01	<0.01	<0.01	0.029	0.015	0.11	<0.01	<0.01	0.037	0.026	<0.02	<0.02	<0.01	-	
	29 Oct 2020	1.66	0.07	0.77	2.43	2.43	4.05	4.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.39	<0.2	<0.02	<0.02	<0.02	0.04	0.06	0.62	<0.02	<0.02	0.32	0.12	<0.05	<0.02	<0.02	3.69	
	29 Mar 2021	0.33	0.02	0.42	0.75	0.75	1.06	1.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.10	<0.02	<0.02	0.05	0.02	<0.05	<0.02	<0.02	1.01	
	18 Aug 2021	1.08	0.04	0.41	1.49	1.49	2.52	2.52	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.26	<0.1	<0.02	<0.02	<0.02	0.03	0.04	0.38	<0.02	<0.02	0.21	0.07	<0.05	<0.02	<0.02	2.28	
	01 Mar 2022	0.66	0.03	0.28	0.94	-	1.45	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.18	<0.02	<0.02	0.11	0.03	<0.05	<0.02	<0.02	1.34	
	10 Mar 2023	0.80	0.06	0.68	1.48	-	2.44	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.26	<0.1	<0.02	<0.02	<0.02	0.04	0.04	0.34	<0.02	<0.02	0.16	0.06	<0.05	<0.02	<0.02	2.24	
	22 Aug 2023	0.55	0.04	0.46	1.01	-	1.47	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	0.24	0.16	<0.02	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	1.47	
	04 Mar 2024	0.41	0.03	0.42	0.83	-	1.25	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	0.02	0.02	0.13	<0.02	<0.02	0.07	0.03	<0.05	<0.02	<0.02	1.16	
	09 Oct 2024	0.91	0.06	0.64	1.55	-	2.44	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.24	<0.1	<0.02	<0.02	<0.02	0.04	0.03	0.25	<0.02	<0.02	0.14	0.07	<0.05	<0.02	<0.02	2.20	
SW121	10 Dec 2018	0.23	<0.01	0.24	-	0.47	-	0.605	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.043	<0.05	<0.01	<0.01	<0.01	<0.01	0.01	0.054	<0.01	<0.01	0.028	<0.02	<0.02	<0.02	<0.01	-	
		0.22	0.02	0.22	-	0.44	-	0.8	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.043	0.085	<0.01	<0.01	<0.01	<0.01	0.017	0.14	<0.01	<0.01	0.028	0.027	<0.02	<0.02	<0.01	-	
	16 Dec 2018	0.5	0.038	0.77	-	1.27	-	1.734	<0.01	<0.01	0.088	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.085	<0.05	<0.01	<0.01	<0.01	0.024	0.016	0.13	<0.01	<0.01	0.055	0.028	<0.02	<0.02	<0.01	-	
	11 Jul 2019	0.09	<0.01	0.065	-	0.155	-	0.214	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.024	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.024	<0.01	<0.01	0.011	<0.02	<0.02	<0.02	<0.01	-	
	03 Feb 2020	1.3	0.063	0.6	-	1.9	-	3.179	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.25	0.13	<0.01	<0.01	<0.01	0.029	0.035	0.46	0.027	<0.01	0.21	0.075	<0.02	<0.02	<0.01	-	
	29 Oct 2020	2.13	0.09	1.19	3.32	3.32	5.09	5.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.35	<0.3	<0.02	<0.02	<0.02	0.06	0.06	0.71	0.06	<0.02	0.32	0.12	<0.05	<0.02	<0.02	4.65	
	29 Mar 2021	0.76	0.04	0.52	1.28	1.28	1.90	1.9	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.1	<0.02	<0.02	<0.02	0.03	0.02	0.23	<0.02	<0.02	0.10	0.04	<0.05	<0.02	<0.02	1.77	
	16 Aug 2021	5.52	0.22	1.14	6.66	6.66	10.7	10.66	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.71	0.2	<0.02	<0.02	<0.02	0.13	0.13	1.58	0.06	<0.02	0.76	0.21	<0.05	<0.02	<0.02	9.71	
	01 Mar 2022	0.46	0.03	0.36	0.82	-	1.20	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.13	<0.02	<0.02	0.07	0.03	<0.05	<0.02	<0.02	1.13	
	22 Aug 2022	0.97	0.05	0.48	1.45	-	2.30	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.24	<0.1	<0.02	<0.02	<0.02	0.03	0.03	0.29	<0.02	<0.02	0.16	0.05	<0.05	<0.02	<0.02	2.11	
	04 Mar 2024	0.34	0.02	0.36	0.70	-	0.93	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	0.88	
	09 Oct 2024	9.12	0.32	2.84	12.0	-	17.8	-	<0.09	<0.09	<0.09	<0.09	<0.22	<0.22	<0.09	<0.22	<0.22	<0.09	1.02	<0.4	<0.09	<0.09	<0.09	0.21	0.13	2.22	0.18	<0.09	1.10	0.32	<0.22	<0.09	<0.09	16.0	
Former Fire Station																																						
SW109	16 Dec 2018	3.1	0.4	5.2	-	8.3	-	12.042	<0.01	<0.01	<0.01	0.071	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.54	0.34	<0.01	<0.01	<0.01	0.31	0.13	1.1	0.034	0.047	0.38	0.39	<0.02	<0.02	<0.01	-	
	29 Mar 2021	55.4	5.61	72.5	128	127.9	178	178.24	<0.50	<0.50	<0.50	<0.50	<1.24	<1.24	<0.50	<1.24	<1.24	<0.50	7.25	<2.5	<0.50	<0.50	<0.50	3.53	2.43	20.4	<0.50	<0.50	7.00	4.12	<1.24	<0.50	<0.50	168	
	01 Mar 2022	103	11.3	89.2	192	-	298	-	<0.22	<0.22	<0.22	<0.22	<0.56	<0.56	<0.22	<0.56	<0.56	<0.22	15.1	4.0	<0.22	<0.22	<0.22	5.13	4.36	41.1	<0.22	<0.22	16.1	8.21	<0.56	<0.22	<0.22	276	
	22 Aug 2022	55.6	6.36	109	165	-	216	-	<0.05	<0.05	0.33	0.07	<0.10	<0.10	<0.04	<0.10	<0.10	<0.04	7.41	1.4	0.08	<0.04	<0.04	5.98	2.63	14.8	0.33	0.18	8.48	3.34	<0.10	<0.04	<0.04	201	
	06 Mar 2023	51.4	4.82	82.2	134	-	181	-	<0.10	<0.10	0.10	<0.10	<0.25	<0.25	<0.10	<0.25	<0.25	<0.10	7.23	1.5	<0.10	<0.10	<0.10	3.57	2.06	16.8	0.21	0.41	6.83	3.48	<0.25	<0.10	<0.10	170	
	22 Aug 2023	30.8	3.55	47.2	78.0	-	112	-	<0.10	<0.10	<0.13	<0.10	<0.24	<0.24	<0.10	<0.24	<0.24	<0.10	6.25	1.5	<0.10	<0.10	<0.10	1.06	1.61	12.0	<0.10	<0.10	5.69	2.15	<0.24	<0.10	<0.10	105	
	04 Mar 2024	19.4	1.47	32.4	51.8	-	66.5	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	1.96	0.4	0.02	<0.02	<0.02	1.63	0.61	4.84	0.10	0.09	2.59	0.96	<0.05	<0.02	<0.02	62.0	
	09 Oct 2024	35.3	2.54	161	196	-	230	-	<0.52	<0.52	<0.52	<0.52	<1.30	<1.30	<0.52	<1.30	<1.30	<0.52	5.19	<2.6	<0.52	<0.52	<0.52	1.97	0.78	13.6	0.78	<0.52	4.15	2.49	<1.30	<0.52	<0.52	221	
SW110	14 Dec 2018	21	0.51	13	-	34	-	39.907	<0.01	<0.01	0.018	0.033	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.74	0.41	<0.01	<0.01	<0.01	0.32	0.23	2.3	0.039	0.027	0.69	0.59	<0.02	<0.02	<0.01	-	
	08 Jul 2019	2.2	0.048	1.6	-	3.8	-	4.755	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.3	0.095	<0.01	<0.01	<0.01	0.037	0.021	0.22	<0.01	<0.01	0.19	0.044	<0.02	<0.02	<0.01	-	
	03 Feb 2020	0.41	0.013	0.25	-	0.66	-	0.841	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.062	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.068	<0.01	<0.01	0.038	<0.02	<0.02	<0.02	<0.01	-	
	29 Mar 2021	1.47	0.06	1.28	2.75	2.75	3.58	3.58	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.23	<0.1	<0.02	<0.02	<0.02	0.05	0.02	0.25	<0.02	<0.02	0.16	0.06	<0.05	<0.02	<0.02	3.37	
	01 Mar 2022	13.0	1.14	17.0	30.0	-	43.3	-	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.02	<0.06	<0.06	<0.02	2.13	0.6	<0.02	<0.02	<0.02	0.81	0.48	4.98	<0.02	<0.02	2.18	0.98	<0.06	<0.02	<0.02	40.3	
	26 Apr 2022	0.01	<0.01	0.02	0.03	-	0.03	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03	
	22 Aug 2022	25.4	2.54	47.7	73.1	-	95.6	-	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	3.36	0.6	<0.02	<0.02	<0.02	2.78	0.96	7.21	0.21	0.06	3.36	1.28	<0.05	<0.02	<0.02	89.2	
	07 Oct 2022	17.6	1.51	32.9	50.5	-	65.8	-	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	2.20	0.7	<0.05	<0.05	<0.05	1.98	0.62	4.62	0.14	<0.05	2.56	1.01	<0.12	<0.05	<0.05	61.2	
	15 Mar 2023	33.3	2.67	36.9	70.2	-	98.4	-	<0.09	<0.09	<0.09	<0.09	<0.23	<0.23	<0.09	<0.23	<0.23	<0.09	4.68	0.7	<0.09	<0.09	<0.09	2.40	1.16	9.79	<0.12	<0.09	4.93	1.91	<0.23	<0.09	<0.09	91.1	
	22 Aug 2023	15.0	1.48	23.2	38.2	-	53.3	-	<0.05	<0.05	<0.05	<0.05	<0.12	<0.12	<0.05	<0.12	<0.12	<0.05	3.36	0.6	<0.05	<0.05	<0.05	0.54	0.67	4.72	0.07	<0.05	2.78	0.84	<0.12	<0.05	<0.05	49.9	
	04 Mar 2024	16.2	1.24	28.3	44.5	-	56.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	1.57	0.3	0.02	<0.02	<0.02	1.39	0.47	3.67	0.08	0.04	2.15	0.74	<0.05	<0.02	<0.02	52.5	

Table 8
Historical Surface Water Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																													
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.001	0.001	0.002	0.01		0.01		0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.002	0.005	0.002	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001	0.01			
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																																
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																																
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																		
Location Code	Date																																					
Lavarack Golf Course and Sporting Fields																																						
SW129	10 Dec 2018	0.02	<0.01	0.034	-	0.054	-	0.054	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-		
		0.02	0.02	0.036	-	0.056	-	0.152	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	0.03	0.025	<0.01	<0.01	<0.01	0.021	<0.02	<0.02	<0.01	-		
	16 Dec 2018	0.065	<0.01	0.055	-	0.12	-	0.223	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.036	<0.05	<0.01	<0.01	<0.01	<0.01	0.011	0.019	<0.01	<0.01	<0.01	0.037	<0.02	<0.02	<0.01	-		
	26 Mar 2021	0.31	0.03	0.29	0.60	0.6	0.94	0.94	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	<0.02	0.02	0.08	<0.02	<0.02	0.04	0.09	<0.05	<0.02	<0.02	0.90		
	22 Apr 2022	0.06	<0.01	0.03	0.09	-	0.09	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09		
	06 Mar 2023	0.31	0.04	0.20	0.51	-	1.14	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.09	0.1	<0.02	<0.02	<0.02	<0.02	0.04	0.15	<0.02	<0.02	0.04	0.17	<0.05	<0.02	<0.02	1.10		
	04 Mar 2024	0.18	0.02	0.11	0.29	-	0.55	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	0.02	0.06	<0.02	<0.02	0.02	0.08	<0.05	<0.02	<0.02	0.53		
SW130	10 Dec 2018	0.079	<0.01	0.031	-	0.11	-	0.177	<0.01	<0.01	0.016	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.024	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	<0.01	<0.01	0.013	<0.02	<0.02	<0.02	<0.01	-		
		0.083	<0.01	0.023	-	0.106	-	0.226	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.026	0.063	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.011	<0.02	<0.02	<0.02	<0.01	-		
	16 Dec 2018	0.2	<0.01	0.13	-	0.33	-	0.458	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.067	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.032	<0.01	<0.01	0.029	<0.02	<0.02	<0.02	<0.01	-		
	26 Mar 2021	0.58	0.03	0.69	1.27	1.27	1.68	1.68	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.12	<0.02	<0.02	0.09	0.03	<0.05	<0.02	<0.02	1.56		
	22 Apr 2022	0.19	<0.01	0.04	0.23	-	0.36	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.32		
	08 Mar 2023	0.23	<0.01	0.08	0.31	-	0.45	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.41		
	04 Mar 2024	0.40	0.02	0.40	0.80	-	1.04	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	0.98		
Top, Middle and Lower Dams																																						
SW139	02 Oct 2018	0.74	0.039	0.74	-	1.48	-	2.019	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.12	0.056	<0.01	<0.01	<0.01	0.025	0.017	0.16	<0.01	<0.01	0.085	0.037	<0.02	<0.02	<0.01	-		
	29 Oct 2020	0.84	0.04	0.99	1.83	1.83	2.52	2.52	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	0.04	0.03	0.25	<0.02	<0.02	0.14	0.05	<0.05	<0.02	<0.02	2.34		
	29 Mar 2021	0.84	0.07	1.56	2.40	2.4	3.16	3.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	0.06	0.03	0.29	<0.02	<0.02	0.11	0.06	<0.05	<0.02	<0.02	2.99		
	22 Jun 2021	1.18	0.10	1.60	2.78	2.78	3.79	3.79	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.18	<0.1	<0.02	<0.02	<0.02	0.07	0.05	0.37	<0.02	<0.02	0.17	0.07	<0.05	<0.02	<0.02	3.55		
	16 Aug 2021	1.28	0.10	1.78	3.06	3.06	4.05	4.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.19	<0.1	<0.02	<0.02	<0.02	0.08	0.04	0.35	<0.02	<0.02	0.17	0.06	<0.05	<0.02	<0.02	3.80		
	01 Mar 2022	0.31	0.03	0.55	0.86	-	1.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	1.02		
	22 Aug 2022	0.76	0.06	1.06	1.82	-	2.45	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	0.05	0.03	0.21	<0.02	<0.02	0.10	0.04	<0.05	<0.02	<0.02	2.30		
	06 Mar 2023	1.00	0.08	1.34	2.34	-	3.14	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.1	<0.02	<0.02	<0.02	0.06	0.03	0.28	<0.02	<0.02	0.13	0.06	<0.05	<0.02	<0.02	2.95		
	22 Aug 2023	1.04	0.09	1.35	2.39	-	3.22	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.16	<0.2	<0.02	<0.02	<0.02	0.06	0.05	0.29	0.02	<0.02	0.12	0.04	<0.05	<0.02	<0.02	3.02		
	04 Mar 2024	0.13	<0.01	0.18	0.31	-	0.37	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.37		
	09 Oct 2024	1.29	0.09	1.73	3.02	-	4.14	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.23	<0.1	<0.02	<0.02	<0.02	0.08	0.04	0.36	<0.02	<0.02	0.16	0.08	<0.05	<0.02	<0.02	3.82		
SW140	03 Oct 2018	0.72	0.037	0.76	-	1.48	-	1.986	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.12	0.052	<0.01	<0.01	<0.01	0.025	0.016	0.14	<0.01	<0.01	0.082	0.034	<0.02	<0.02	<0.01	-		
	10 Jul 2019	1	0.078	1.5	-	2.5	-	3.318	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.14	0.063	<0.01	<0.01	<0.01	0.043	0.031	0.28	<0.01	<0.01	0.12	0.063	<0.02	<0.02	<0.01	-		
	05 Aug 2019	1.2	0.093	1.6	-	2.8	-	3.848	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.18	0.068	<0.01	<0.01	<0.01	0.053	0.04	0.39	<0.01	<0.01	0.15	0.074	<0.02	<0.02	<0.01	-		
	03 Feb 2020	0.16	0.011	0.31	-	0.47	-	0.578	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.039	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.038	<0.01	<0.01	0.02	<0.02	<0.02	<0.02	<0.01	-		
	29 Oct 2020	0.89	0.06	1.63	2.52	2.52	3.20	3.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	0.05	0.02	0.25	<0.02	<0.02	0.12	0.05	<0.05	<0.02	<0.02	3.03		
	29 Mar 2021	0.42	0.03	0.62	1.04	1.04	1.36	1.36	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.12	<0.02	<0.02	0.05	0.03	<0.05	<0.02	<0.02	1.29		
	16 Aug 2021	1.12	0.09	1.57	2.69	2.69	3.61	3.61	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.17	<0.1	<0.02	<0.02	<0.02	0.06	0.04	0.34	<0.02	<0.02	0.16	0.06	<0.05	<0.02	<0.02	3.39		
	01 Mar 2022	0.21	0.02	0.37	0.58	-	0.72	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.69		
	22 Aug 2022	0.79	0.06	1.09	1.88	-	2.50	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	0.05	0.03	0.22	<0.02	<0.02	0.10	0.04	<0.05	<0.02	<0.02	2.35		
	06 Mar 2023	0.61	0.05	0.91	1.52	-	1.98	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.17	<0.02	<0.02	0.07	0.03	<0.05	<0.02	<0.02	1.87		
	22 Aug 2023	1.59	0.09	2.66	4.25	-	5.25	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.23	0.1	<0.02	<0.02	<0.02	0.09	0.03	0.25	<0.02	<0.02	0.17	0.04	<0.05	<0.02	<0.02	4.99		
	04 Mar 2024	0.11	<0.01	0.19	0.30	-	0.35	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.35		
	09 Oct 2024	1.11	0.08	1.52	2.63	-	3.64	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.21	<0.1	<0.02	<0.02	<0.02	0.06	0.04	0.32	<0.02	<0.02	0.16	0.07	<0.05	<0.02	<0.02	3.35		

Table 8
Historical Surface Water Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																										
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.001	0.001	0.002	0.01		0.01		0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.002	0.005	0.002	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001	0.01	
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																													
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																													
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																															
Location Code	Date																																		
SW144	02 Oct 2018	0.07	<0.01	0.07	-	0.14	-	0.173	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.02	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	08 Jul 2019	0.099	<0.01	0.094	-	0.193	-	0.229	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.02	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.016	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	05 Aug 2019	0.1	<0.01	0.096	-	0.196	-	0.235	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.021	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	03 Feb 2020	0.074	<0.01	0.082	-	0.156	-	0.21	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.03	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	0.011	<0.02	<0.02	<0.02	<0.01	-
	13 May 2021	0.06	<0.01	0.07	0.13	0.13	0.13	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.13
	16 Aug 2021	0.09	<0.01	0.09	0.18	0.18	0.21	0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.21
	01 Mar 2022	0.06	<0.01	0.07	0.13	-	0.13	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.13
	22 Aug 2022	0.07	<0.01	0.05	0.12	-	0.12	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12
	10 Mar 2023	0.08	<0.01	0.11	0.19	-	0.21	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.21
	22 Aug 2023	0.10	<0.01	0.09	0.19	-	0.22	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.22
	04 Mar 2024	0.09	<0.01	0.13	0.22	-	0.28	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.28
	09 Oct 2024	0.14	<0.01	0.16	0.30	-	0.37	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.37
Remaining on-Base																																			
SW113	12 Dec 2018	0.052	<0.01	0.054	-	0.106	-	0.132	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.026	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	03 Feb 2020	0.1	<0.01	0.065	-	0.165	-	0.215	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.038	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.02	<0.02	<0.02	<0.01	-
	28 Oct 2020	0.19	0.03	0.22	0.41	0.41	1.03	1.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	0.2	<0.02	<0.02	<0.02	<0.02	0.02	0.20	<0.02	<0.02	0.03	0.06	<0.05	<0.02	<0.02	1.00
	29 Mar 2021	0.16	<0.01	0.10	0.26	0.26	0.33	0.33	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.31
	01 Mar 2022	0.14	<0.01	0.08	0.22	-	0.26	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.26
	22 Aug 2022	0.15	<0.01	0.05	0.20	-	0.27	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.25
	10 Mar 2023	0.15	<0.01	0.09	0.24	-	0.30	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.30
	22 Aug 2023	0.16	<0.01	0.07	0.23	-	0.36	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.34
	04 Mar 2024	0.05	<0.01	0.05	0.10	-	0.10	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.10
SW120	12 Dec 2018	0.06	<0.01	0.087	-	0.147	-	0.164	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.017	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	29 Mar 2021	0.17	<0.01	0.12	0.29	0.29	0.36	0.36	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.34
	22 Apr 2022	0.05	<0.01	0.04	0.09	-	0.11	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11
	04 Mar 2024	0.10	<0.01	0.07	0.17	-	0.22	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.22
Base Boundary - On-base																																			
SW126	10 Dec 2018	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
		<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	12 Jul 2019	<0.01	<0.01	<0.02	-	0	-	0.069	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	0.069	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	26 Mar 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	22 Apr 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	08 Mar 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	04 Mar 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
SW128	10 Dec 2018	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
		<0.01	<0.01	<0.02	-	0	-	0.054	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	0.054	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	16 Dec 2018	0.063	<0.01	0.1	-	0.163	-	0.191	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.028	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	26 Mar 2021	0.05	<0.01	0.10	0.15	0.15	0.15	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.15
	22 Apr 2022	0.02	<0.01	0.04	0.06	-	0.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06
	06 Mar 2023	0.21	<0.01	0.13	0.34	-	0.49	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.46
	25 Aug 2023	0.02	<0.01	0.03	0.05	-	0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05
	04 Mar 2024	0.06	<0.01	0.07	0.13	-	0.16	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.16

Table 8
Historical Surface Water Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																											
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.001	0.001	0.002	0.01		0.01		0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.002	0.005	0.002	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001	0.01	
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																
Location Code	Date																																			
SW132	10 Dec 2018	0.12	<0.01	0.8	-	0.92	-	0.967	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.023	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	0.011	<0.02	<0.02	<0.02	<0.01	-		
		0.12	0.01	0.51	-	0.63	-	0.694	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.021	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.033	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-		
	16 Dec 2018	0.28	0.016	0.47	-	0.75	-	0.915	<0.01	<0.01	0.012	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.048	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.057	<0.01	<0.01	0.032	<0.02	<0.02	<0.02	<0.01	-		
	09 Jul 2019	1.5	0.079	1.5	-	3	-	4.048	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.25	0.12	<0.01	<0.01	<0.01	0.053	0.034	0.27	<0.01	<0.01	0.18	0.062	<0.02	<0.02	<0.01	-		
	03 Feb 2020	0.16	0.011	0.28	-	0.44	-	0.543	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.036	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.037	<0.01	<0.01	0.019	<0.02	<0.02	<0.02	<0.01	-		
	29 Oct 2020	0.38	0.03	0.74	1.12	1.12	1.39	1.39	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.09	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.09	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	1.33		
	01 Apr 2021	1.16	0.08	1.39	2.55	2.55	3.50	3.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.24	<0.1	<0.02	<0.02	<0.02	0.06	0.04	0.27	<0.02	<0.02	0.20	0.06	<0.05	<0.02	<0.02	3.24		
	01 Mar 2022	0.41	0.03	0.58	0.99	-	1.25	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.09	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	1.19		
	06 Mar 2023	0.82	0.06	1.20	2.02	-	2.63	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	0.05	0.02	0.20	<0.02	<0.02	0.10	0.04	<0.05	<0.02	<0.02	2.48		
	25 Aug 2023	2.52	0.14	2.96	5.48	-	7.07	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.32	0.1	<0.02	<0.02	<0.02	0.15	0.05	0.48	<0.02	<0.02	0.29	0.06	<0.05	<0.02	<0.02	6.63		
	04 Mar 2024	0.13	<0.01	0.23	0.36	-	0.42	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.42		
	09 Oct 2024	3.25	0.21	3.06	6.31	-	9.13	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.61	0.1	<0.02	<0.02	<0.02	0.25	0.08	0.70	<0.02	<0.02	0.51	0.13	<0.05	<0.02	<0.02	8.14		
SW133	22 Apr 2022	0.04	<0.01	0.04	0.08	-	0.08	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.08		
	06 Mar 2023	0.41	0.01	0.26	0.67	-	0.87	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.09	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.83		
	05 Mar 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01		
SW134	29 Oct 2020	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01		
	01 Apr 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01		
	18 Aug 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01		
	22 Apr 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01		
	08 Mar 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01		
	22 Aug 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01		
	04 Mar 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01		
	09 Oct 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01		
SW135	10 Dec 2018	0.037	<0.01	0.072	-	0.109	-	0.121	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.012	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-		
		0.038	<0.01	0.07	-	0.108	-	0.131	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.011	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-		
	12 Dec 2018	0.11	<0.01	0.1	-	0.21	-	0.237	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.027	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-		
	03 Feb 2020	0.1	<0.01	0.13	-	0.23	-	0.282	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.041	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.02	<0.02	<0.02	<0.01	-		
	28 Oct 2020	0.16	<0.01	0.52	0.68	0.68	0.76	0.76	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.76		
	29 Mar 2021	2.02	0.07	3.62	5.64	5.64	6.49	6.49	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.18	<0.1	<0.02	<0.02	<0.02	0.09	0.03	0.25	0.05	<0.02	0.13	0.05	<0.05	<0.02	<0.02	6.22		
	22 Jun 2021	1.02	0.03	2.44	3.46	3.46	3.86	3.86	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.08	0.04	<0.02	0.08	<0.02	<0.05	<0.02	<0.02	3.69		
	18 Aug 2021	0.09	<0.01	0.19	0.28	0.28	0.30	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.30		
	01 Mar 2022	0.15	<0.01	0.25	0.40	-	0.46	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.46		
	22 Aug 2022	0.20	<0.01	0.30	0.50	-	0.58	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.56		
	06 Mar 2023	0.81	0.06	0.32	1.13	-	1.92	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.21	<0.1	<0.02	<0.02	<0.02	0.03	0.03	0.28	<0.02	<0.02	0.12	0.06	<0.05	<0.02	<0.02	1.77		
	22 Aug 2023	0.32	<0.01	0.32	0.64	-	0.78	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.09	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	0.73		
	04 Mar 2024	0.12	<0.01	0.09	0.21	-	0.24	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.24		
	09 Oct 2024	0.49	<0.01	0.41	0.90	-	1.09	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.10	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	1.00		

Table 8
Historical Surface Water Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																													
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.001	0.001	0.002	0.01		0.01		0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.002	0.005	0.002	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001	0.01		
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																															
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																															
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																	
Location Code	Date																																				
SW136	10 Dec 2018	0.11	<0.01	0.07	-	0.18	-	0.241	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.023	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.027	<0.01	<0.01	0.011	<0.02	<0.02	<0.02	<0.01	-		
		0.11	<0.01	0.083	-	0.193	-	0.312	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.024	0.052	<0.01	<0.01	<0.01	<0.01	<0.01	0.043	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-		
	14 Dec 2018	0.12	<0.01	0.1	-	0.22	-	0.277	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.025	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.021	<0.01	<0.01	0.011	<0.02	<0.02	<0.02	<0.01	-		
	17 Dec 2018	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-		
	11 Jul 2019	0.32	0.034	0.69	-	1.01	-	1.278	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.064	0.064	<0.01	<0.01	<0.01	0.016	0.01	0.05	<0.01	<0.01	0.03	<0.02	<0.02	<0.02	<0.01	-		
	03 Feb 2020	0.22	0.014	0.2	-	0.42	-	0.63	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.056	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	0.02	<0.02	<0.02	<0.02	<0.01	-		
	26 Mar 2021	0.16	0.01	0.36	0.52	0.52	0.62	0.62	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.62		
	02 Mar 2022	0.10	<0.01	0.25	0.35	-	0.40	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.40		
	06 Mar 2023	0.31	0.01	0.30	0.61	-	0.78	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.75		
	04 Mar 2024	0.14	<0.01	0.28	0.42	-	0.48	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.48		
Off-Base																																					
SW203	08 Dec 2017	0.098	0.012	0.13	-	0.228	-	0.279	-	-	<0.01	<0.01	<0.02	<0.05	-	<0.02	<0.05	-	0.025	<0.05	-	<0.01	<0.01	<0.01	<0.01	0.014	<0.01	<0.01	-	<0.02	<0.02	<0.02	<0.01	-		
	26 Sep 2018	0.17	<0.01	0.15	-	0.32	-	0.391	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.041	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.015	<0.01	<0.01	0.015	<0.02	<0.02	<0.02	<0.01	-		
	08 Jul 2019	0.65	0.035	0.9	-	1.55	-	1.85	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.078	<0.05	<0.01	<0.01	<0.01	0.033	0.014	0.087	<0.01	<0.01	0.053	<0.02	<0.02	<0.02	<0.01	-		
	04 Feb 2020	0.18	0.014	0.35	-	0.53	-	0.657	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.047	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.044	<0.01	<0.01	0.022	<0.02	<0.02	<0.02	<0.01	-		
	02 Nov 2020	0.19	0.01	0.17	0.36	0.36	0.48	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.46		
	29 Mar 2021	0.31	0.02	0.42	0.73	0.73	0.93	0.93	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.89		
	19 Aug 2021	0.37	0.02	0.36	0.73	0.73	0.92	0.92	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	0.87		
	02 Mar 2022	0.23	0.01	0.30	0.53	-	0.65	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.63		
	22 Aug 2022	0.19	<0.01	0.21	0.40	-	0.51	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.48		
	06 Mar 2023	0.75	0.04	1.05	1.80	-	2.30	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.16	<0.02	<0.02	0.09	0.03	<0.05	<0.02	<0.02	2.16		
	21 Aug 2023	0.40	0.02	0.40	0.80	-	1.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	0.07	<0.02	<0.05	<0.02	<0.02	0.99		
	04 Mar 2024	0.14	0.01	0.20	0.34	-	0.41	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.41		
	09 Oct 2024	1.29	0.06	1.28	2.57	-	3.46	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.25	<0.1	<0.02	<0.02	<0.02	0.09	0.03	0.20	<0.02	<0.02	0.15	0.04	<0.05	<0.02	<0.02	3.15		
SW205	08 Dec 2017	<0.01	<0.01	<0.02	-	0	-	0	-	-	<0.01	<0.01	<0.02	<0.05	-	<0.02	<0.05	-	<0.01	<0.05	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.02	<0.01	-		
	27 Sep 2018	0.011	<0.01	<0.02	-	0.011	-	0.022	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.011	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-		
	09 Jul 2019	0.027	<0.01	0.03	-	0.057	-	0.071	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.014	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-		
	02 Nov 2020	<0.02	<0.01	0.02	0.02	0.02	0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02		
	29 Mar 2021	<0.02	<0.01	0.02	0.02	0.02	0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02		
	19 Aug 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01		
	02 Mar 2022	0.01	<0.01	0.01	0.02	-	0.02	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02		
	22 Aug 2022	0.03	<0.01	0.02	0.05	-	0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05		
	09 Mar 2023	<0.05	<0.05	0.09	0.09	-	0.09	-	<0.05	<0.05	<0.05	<0.05	<0.13	<0.13	<0.05	<0.13	<0.13	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.13	<0.05	<0.05	0.09		
	21 Aug 2023	<0.01	<0.01	0.02	0.02	-	0.02	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02		
	09 Oct 2024	0.02	<0.01	0.03	0.05	-	0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05		

Table 8
Historical Surface Water Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																											
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.001	0.001	0.002	0.01		0.01		0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.002	0.005	0.002	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001	0.01	
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																
Location Code	Date																																			
SW211	30 Nov 2017	0.033	<0.01	0.047	-	0.08	-	0.152	-	-	<0.01	<0.01	<0.02	<0.05	-	<0.02	<0.05	-	0.014	0.058	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.02	<0.01	-
	17 Dec 2018	0.037	<0.01	0.035	-	0.072	-	0.103	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.031	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	09 Jul 2019	0.019	0.01	0.034	-	0.053	-	0.081	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.018	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	01 Apr 2021	<0.02	<0.01	0.03	0.03	0.03	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05
	19 Aug 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	03 Mar 2022	0.02	<0.01	0.03	0.05	-	0.08	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.08
	25 Aug 2022	<0.01	<0.01	0.02	0.02	-	0.02	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02
	09 Mar 2023	0.05	<0.01	0.04	0.09	-	0.11	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11
	22 Aug 2023	0.02	<0.01	0.02	0.04	-	0.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06
	07 Mar 2024	0.06	<0.01	0.03	0.09	-	0.11	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11
	09 Oct 2024	<0.04	<0.01	0.03	<0.04	-	<0.04	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.04
SW212	30 Nov 2017	0.063	<0.01	0.06	-	0.123	-	0.32	-	-	<0.01	<0.01	<0.02	<0.05	-	<0.02	<0.05	-	0.044	0.11	-	<0.01	<0.01	<0.01	<0.01	0.021	<0.01	<0.01	-	0.022	<0.02	<0.02	<0.01	-
	17 Dec 2018	0.18	<0.01	0.1	-	0.28	-	0.432	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.079	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.031	<0.01	<0.01	0.022	0.02	<0.02	<0.02	<0.01	-
	09 Jul 2019	0.08	<0.01	0.044	-	0.124	-	0.245	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.036	0.062	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	0.01	<0.02	<0.02	<0.02	<0.01	-
	01 Apr 2021	0.06	<0.01	0.02	0.08	0.08	0.11	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11
	19 Aug 2021	0.04	0.02	0.07	0.11	0.11	0.21	0.21	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.08	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.21
	03 Mar 2022	0.02	<0.01	0.02	0.04	-	0.08	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.08
	25 Aug 2022	0.04	<0.01	0.01	0.05	-	0.09	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09
	09 Mar 2023	0.18	0.01	0.10	0.28	-	0.48	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	0.02	0.06	<0.05	<0.02	<0.02	0.46
	22 Aug 2023	0.03	<0.01	0.03	0.06	-	0.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06
	07 Mar 2024	0.04	<0.01	0.03	0.07	-	0.07	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.07
	09 Oct 2024	0.02	<0.01	0.03	0.05	-	0.09	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09
SW217	17 Dec 2018	0.011	0.011	<0.02	-	0.011	-	0.039	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.017	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	02 Nov 2020	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	29 Mar 2021	0.03	<0.01	0.02	0.05	0.05	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.05
	19 Aug 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	02 Mar 2022	<0.01	<0.01	0.01	0.01	-	0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01
	22 Aug 2022	0.02	<0.01	0.02	0.04	-	0.04	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04
	06 Mar 2023	0.04	<0.01	0.02	0.06	-	0.09	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09
	21 Aug 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	04 Mar 2024	<0.01	<0.01	0.01	0.01	-	0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01
	09 Oct 2024	<0.01	<0.01	0.01	0.01	-	0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01

Table 8
Historical Surface Water Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																										
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.001	0.001	0.002	0.01		0.01		0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.002	0.005	0.002	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																													
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																													
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																															
Location Code	Date																																		
SW220	30 Nov 2017	0.51	0.032	0.45	-	0.96	-	1.428	-	-	<0.01	<0.01	<0.02	<0.05	-	<0.02	<0.05	-	0.094	0.13	-	<0.01	<0.01	0.014	0.019	0.13	0.015	<0.01	-	0.034	<0.02	<0.02	<0.01	-
	19 Sep 2018	0.28	<0.01	0.21	-	0.49	-	0.703	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.048	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	0.036	<0.01	<0.01	0.019	<0.02	<0.02	<0.02	<0.01	-
	08 Jul 2019	0.47	0.014	0.29	-	0.76	-	1.196	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.073	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	0.073	0.01	<0.01	0.044	0.022	<0.02	<0.02	<0.01	-
	04 Feb 2020	0.42	0.014	0.29	-	0.71	-	0.9	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.073	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.055	0.012	<0.01	0.036	<0.02	<0.02	<0.02	<0.01	-
	02 Nov 2020	0.37	0.02	0.45	0.82	0.82	1.03	1.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.99
	01 Apr 2021	0.73	0.02	0.52	1.25	1.25	1.67	1.67	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.14	<0.02	<0.02	0.09	0.02	<0.05	<0.02	<0.02	1.55
	16 Aug 2021	1.23	0.04	0.54	1.77	1.77	2.46	2.46	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.19	<0.1	<0.02	<0.02	<0.02	0.04	0.02	0.24	<0.02	<0.02	0.13	0.03	<0.05	<0.02	<0.02	2.29
	02 Mar 2022	1.05	0.04	0.91	1.96	-	2.53	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.19	0.03	<0.02	0.11	0.02	<0.05	<0.02	<0.02	2.35
	22 Aug 2022	1.34	0.04	0.74	2.08	-	2.80	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.17	<0.1	<0.02	<0.02	<0.02	0.05	0.02	0.22	0.04	<0.02	0.14	0.04	<0.05	<0.02	<0.02	2.57
	09 Mar 2023	0.36	<0.01	0.27	0.63	-	0.80	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	0.76
	21 Aug 2023	1.77	0.06	0.97	2.74	-	3.81	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.29	<0.1	<0.02	<0.02	<0.02	0.03	0.03	0.36	0.02	<0.02	0.23	0.05	<0.05	<0.02	<0.02	3.53
	04 Mar 2024	0.19	<0.01	0.18	0.37	-	0.44	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.44
	08 Oct 2024	0.96	0.03	0.48	1.44	-	2.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.17	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.19	<0.02	<0.02	0.10	0.06	<0.05	<0.02	<0.02	1.89
SW227	24 Jan 2018	<0.01	<0.01	<0.02	-	0	-	0	-	-	<0.01	<0.01	<0.02	<0.05	-	<0.02	<0.05	-	<0.01	<0.05	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.02	<0.01	-
		<0.01	<0.01	<0.02	-	0	-	0	-	-	<0.01	<0.01	<0.02	<0.05	-	<0.02	<0.05	-	<0.01	<0.05	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.02	<0.02	<0.02	<0.01	-
	02 Aug 2018	0.0014	<0.001	<0.002	-	0.0014	-	0.012	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.0037	0.0069	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	-
		0.0012	<0.001	<0.002	-	0.0012	-	0.0117	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.0035	0.007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	-
		0.0012	<0.001	<0.002	-	0.0012	-	0.0119	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.0036	0.0071	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	-
	07 Aug 2019	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	03 Nov 2020	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	26 Mar 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	18 Aug 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	28 Feb 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	22 Aug 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	08 Mar 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	22 Aug 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	07 Mar 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	15 Oct 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
SW232	19 Sep 2018	0.018	<0.01	<0.02	-	0.018	-	0.028	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	02 Nov 2020	<0.02	<0.01	0.09	0.09	0.09	0.09	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09
	29 Mar 2021	0.05	<0.01	0.05	0.10	0.1	0.13	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.13
	16 Aug 2021	<0.02	<0.01	0.01	0.01	0.01	0.01	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01
	02 Mar 2022	0.05	<0.01	0.04	0.09	-	0.09	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09
	22 Aug 2022	0.04	<0.01	0.03	0.07	-	0.09	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.09
	09 Mar 2023	0.11	<0.01	0.08	0.19	-	0.25	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.25
	21 Aug 2023	0.05	<0.01	0.04	0.09	-	0.11	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11
	04 Mar 2024	0.05	<0.01	0.05	0.10	-	0.10	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.10
	08 Oct 2024	0.01	<0.01	0.03	0.04	-	0.04	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04

Table 8
Historical Surface Water Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																										
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.001	0.001	0.002	0.01		0.01		0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.002	0.005	0.002	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001	0.01	
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																													
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																													
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																															
Location Code	Date																																		
SW233	19 Sep 2018	0.24	<0.01	0.26	-	0.5	-	0.67	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.058	0.055	<0.01	<0.01	<0.01	<0.01	<0.01	0.032	<0.01	<0.01	0.025	<0.02	<0.02	<0.02	<0.01	-
	09 Jul 2019	0.5	0.029	0.58	-	1.08	-	1.382	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.088	<0.05	<0.01	<0.01	<0.01	0.015	0.011	0.084	<0.01	<0.01	0.054	0.021	<0.02	<0.02	<0.01	-
	04 Feb 2020	0.19	0.016	0.39	-	0.58	-	0.715	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.045	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.049	<0.01	<0.01	0.025	<0.02	<0.02	<0.02	<0.01	-
	02 Nov 2020	0.18	0.01	0.24	0.42	0.42	0.52	0.52	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	0.50
	29 Mar 2021	0.44	0.03	0.69	1.13	1.13	1.47	1.47	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.09	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.11	<0.02	<0.02	0.06	0.02	<0.05	<0.02	<0.02	1.38
	16 Aug 2021	0.57	0.05	0.61	1.18	1.18	1.65	1.65	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.11	<0.1	<0.02	<0.02	<0.02	0.03	0.02	0.16	<0.02	<0.02	0.08	0.02	<0.05	<0.02	<0.02	1.54
	02 Mar 2022	0.27	0.02	0.47	0.74	-	0.90	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.87
	22 Aug 2022	0.68	0.05	0.68	1.36	-	1.88	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.13	<0.1	<0.02	<0.02	<0.02	0.04	0.02	0.15	<0.02	<0.02	0.09	0.04	<0.05	<0.02	<0.02	1.75
	06 Mar 2023	0.81	0.06	1.12	1.93	-	2.53	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	0.05	0.02	0.20	<0.02	<0.02	0.10	0.03	<0.05	<0.02	<0.02	2.38
	21 Aug 2023	0.53	0.05	0.54	1.07	-	1.53	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.14	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.16	<0.02	<0.02	0.09	0.02	<0.05	<0.02	<0.02	1.44
	04 Mar 2024	0.23	0.01	0.33	0.56	-	0.69	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	0.66
	08 Oct 2024	0.77	0.05	0.92	1.69	-	2.27	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.12	<0.1	<0.02	<0.02	<0.02	0.04	0.02	0.20	<0.02	<0.02	0.11	0.04	<0.05	<0.02	<0.02	2.12
SW242	24 Aug 2018	0.012	<0.001	0.011	-	0.023	-	0.0441	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.009	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	0.0021	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	-
		0.012	<0.001	0.0095	-	0.0215	-	0.0411	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.0087	0.009	<0.001	<0.001	<0.001	<0.001	<0.001	0.0019	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	-
	09 Jul 2019	0.061	<0.01	0.037	-	0.098	-	0.135	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	0.024	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	02 Nov 2020	<0.02	<0.01	0.06	0.06	0.06	0.06	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06
	29 Mar 2021	0.07	<0.01	0.06	0.13	0.13	0.16	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.16
	16 Aug 2021	0.02	<0.01	0.02	0.04	0.04	0.04	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04
	02 Mar 2022	0.05	<0.01	0.08	0.13	-	0.13	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.13
	22 Aug 2022	0.06	<0.01	0.06	0.12	-	0.12	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.12
	09 Mar 2023	0.16	<0.01	0.25	0.41	-	0.49	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.49
	21 Aug 2023	0.06	<0.01	0.34	0.40	-	0.42	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.42
	04 Mar 2024	0.05	<0.01	0.12	0.17	-	0.19	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.19
	08 Oct 2024	0.02	<0.01	0.09	0.11	-	0.11	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.11
SW243	24 Aug 2018	0.0037	<0.001	0.0025	-	0.0062	-	0.0108	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.0046	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	-
		0.0038	<0.001	0.0027	-	0.0065	-	0.0174	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.0048	0.0061	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	-
	09 Jul 2019	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	04 Feb 2020	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	02 Nov 2020	<0.02	<0.01	0.01	0.01	0.01	0.01	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.01
	29 Mar 2021	<0.02	<0.01	0.02	0.02	0.02	0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02
	16 Aug 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	02 Mar 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	22 Aug 2022	0.01	<0.01	0.02	0.03	-	0.03	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.03
	09 Mar 2023	0.02	<0.01	0.04	0.06	-	0.06	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06
	21 Aug 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	04 Mar 2024	0.02	<0.01	0.02	0.04	-	0.04	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.04
	08 Oct 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01

Table 8
Historical Surface Water Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																												
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL		0.001	0.001	0.002	0.01		0.01		0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.002	0.005	0.002	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001	0.01
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***			220	0.13																																
Location Code	Date																																			
SW244	02 Aug 2018	0.0016	<0.001	<0.002	-	0.0016	-	0.0148	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.0029	0.0067	<0.001	<0.001	<0.001	<0.001	<0.001	0.0014	<0.001	<0.001	<0.001	0.0022	<0.002	<0.002	<0.001	-
		0.0012	<0.001	<0.002	-	0.0012	-	0.018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.0029	0.0063	<0.001	<0.001	<0.001	<0.001	<0.001	0.0016	<0.001	0.0036	<0.001	0.0024	<0.002	<0.002	<0.001	-
		0.0012	<0.001	<0.002	-	0.0012	-	0.0158	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.003	0.0071	<0.001	<0.001	<0.001	<0.001	<0.001	0.0015	<0.001	<0.001	<0.001	0.003	<0.002	<0.002	<0.001	-
	03 Nov 2020	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	26 Mar 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	18 Aug 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	28 Feb 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	22 Aug 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	08 Mar 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	22 Aug 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	07 Mar 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	15 Oct 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
SW245	03 Aug 2018	<0.001	<0.001	<0.002	-	0	-	0.0021	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.0021	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	-
		<0.001	<0.001	<0.002	-	0	-	0.0075	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.0022	0.0053	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	-
		<0.001	<0.001	<0.002	-	0	-	0.0044	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	0.0021	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0023	<0.001	<0.002	<0.002	<0.002	<0.001	-
	04 Feb 2020	<0.01	<0.01	<0.02	-	0	-	0	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.01	<0.02	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	-
	03 Nov 2020	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	26 Mar 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	18 Aug 2021	<0.02	<0.01	<0.01	<0.01	0	<0.01	0	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	28 Feb 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	22 Aug 2022	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	08 Mar 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	22 Aug 2023	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	07 Mar 2024	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01
	15 Oct 2024	<0.01	<0.01	0.02	0.02	-	0.02	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02

Note:
* = Drinking water guidelines apply only to Off-Base surface water results.
** = Recreation guidelines apply to On-Base and Off-Base surface water results.
*** = Ecological guidelines apply to Off Base surface water and On-Base dam (i.e., SW139, SW140, and SW144) results.

Table 9
Historical Sediment Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																									
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.0002	0.0002	0.0002	0.0002		0.0002		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002
Location Code	Date																																	
Eastern PFAS Contamination Area																																		
SD119	16 Dec 2018	<0.001	<0.001	<0.002	-	0	-	0.0118	<0.002	<0.001	0.0089	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.0029	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	29 Oct 2020	0.0211	0.0011	0.0122	0.0333	0.0333	0.0469	0.0469	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0027	<0.001	<0.0002	<0.0002	<0.0002	0.0006	0.0006	0.0046	<0.0002	<0.0002	0.0032	0.0008	<0.0005	<0.0002	<0.0002	0.0431
	29 Mar 2021	0.0003	<0.0002	0.0006	0.0009	0.0009	0.0009	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009
	18 Aug 2021	0.0153	0.0018	0.0212	0.0365	0.0365	0.0514	0.0514	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0018	0.001	<0.0002	<0.0002	<0.0002	0.0008	0.0009	0.0051	0.0008	<0.0002	0.0017	0.0010	<0.0005	<0.0002	<0.0002	0.0481
	01 Mar 2022	0.0003	<0.0002	0.0003	0.0006	-	0.0006	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
	22 Aug 2022	0.0023	<0.0002	0.0018	0.0041	-	0.0063	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0007	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.0002	0.0007	<0.0002	<0.0005	<0.0002	<0.0002	0.0056
	10 Mar 2023	0.0021	<0.0002	0.0031	0.0052	-	0.0055	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0055
	22 Aug 2023	0.0321	0.0020	0.0350	0.0671	-	0.0812	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0018	<0.001	<0.0002	<0.0002	<0.0002	0.0011	0.0005	0.0034	0.0019	<0.0002	0.0028	0.0006	<0.0005	<0.0002	<0.0002	0.0754
	04 Mar 2024	0.0003	<0.0002	0.0011	0.0014	-	0.0014	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014
	09 Oct 2024	0.0035	0.0003	0.0021	0.0056	-	0.0076	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.0002	0.0005	<0.0002	<0.0005	<0.0002	<0.0002	0.0071
SD121	29 Oct 2020	0.0104	0.0016	0.0461	0.0565	0.0565	0.0692	0.0692	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0008	<0.001	<0.0002	0.0004	0.0005	0.0007	0.0003	0.0020	0.0042	<0.0002	0.0008	0.0002	<0.0005	<0.0002	0.0012	0.0614
	29 Mar 2021	0.0034	0.0004	0.0198	0.0232	0.0232	0.0277	0.0277	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	<0.0002	0.0003	0.0007	0.0004	<0.0002	0.0010	0.0005	<0.0002	0.0002	0.0003	<0.0005	<0.0002	0.0005	0.0251
	16 Aug 2021	0.0097	0.0006	0.0097	0.0194	0.0194	0.0249	0.0249	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0007	<0.001	<0.0002	<0.0002	<0.0002	0.0004	0.0002	0.0018	0.0003	<0.0002	0.0012	0.0003	<0.0005	<0.0002	<0.0002	0.0230
	22 Apr 2022	0.0052	<0.0002	0.0043	0.0095	-	0.0099	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0095
	22 Aug 2022	0.0082	0.0020	0.0541	0.0623	-	0.0714	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0008	<0.001	<0.0002	<0.0002	<0.0002	0.0010	0.0003	0.0021	0.0015	<0.0002	0.0008	0.0003	<0.0005	<0.0002	0.0003	0.0678
	06 Mar 2023	0.0222	0.0013	0.0963	0.118	-	0.131	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0025	<0.001	<0.0002	0.0002	<0.0002	0.0014	0.0003	0.0027	0.0024	<0.0002	0.0018	<0.0002	<0.0005	<0.0002	<0.0002	0.125
	22 Aug 2023	0.0016	<0.0002	0.0055	0.0071	-	0.0073	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0073
	04 Mar 2024	0.0006	<0.0002	0.0032	0.0038	-	0.0038	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0038
	09 Oct 2024	0.502	0.0435	0.418	0.920	-	1.31	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	0.0450	0.010	<0.0010	<0.0010	<0.0010	0.0201	0.0108	0.120	0.0680	<0.0010	0.0578	0.0168	<0.0025	<0.0010	0.0015	1.17
Former Fire Station																																		
SD109	16 Dec 2018	0.0086	0.0011	0.12	-	0.1286	-	0.1499	<0.002	<0.001	<0.005	0.0023	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.0065	<0.001	<0.001	0.002	<0.001	<0.001	0.0019	<0.001	0.0026	<0.001	<0.002	<0.002	0.0049	<0.002	-
	29 Oct 2020	0.0067	0.0007	0.0307	0.0374	0.0374	0.0435	0.0435	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0010	<0.001	<0.0004	<0.0002	<0.0002	0.0007	0.0003	0.0020	<0.0002	<0.0002	0.0009	0.0005	<0.0005	<0.0002	<0.0002	0.0419
	29 Mar 2021	0.0090	0.0010	0.0790	0.0880	0.088	0.101	0.1011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0008	<0.001	0.0027	<0.0002	0.0002	0.0010	0.0005	0.0026	<0.0002	0.0021	0.0009	0.0005	<0.0005	0.0004	0.0004	0.0934
	16 Aug 2021	0.0054	0.0008	0.122	0.127	0.1274	0.139	0.1393	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	0.0004	<0.001	0.0018	<0.0002	0.0004	0.0009	0.0005	0.0014	0.0003	0.0031	0.0005	0.0006	<0.0006	0.0007	0.0005	0.131
	01 Mar 2022	0.0635	0.0076	0.253	0.316	-	0.371	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	0.0055	<0.002	0.0017	<0.0002	<0.0002	0.0051	0.0021	0.0153	0.0005	0.0072	0.0063	0.0029	<0.0006	0.0005	<0.0004	0.350
	22 Aug 2022	0.0297	0.0050	0.566	0.596	-	0.633	-	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0031	<0.001	0.0035	<0.0002	0.0003	0.0047	0.0011	0.0071	0.0007	0.0048	0.0030	0.0019	<0.0005	0.0007	0.0004	0.615
	06 Mar 2023	0.0330	0.0032	0.377	0.410	-	0.434	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	0.0024	<0.005	<0.0010	<0.0010	<0.0010	0.0046	<0.0010	0.0059	<0.0010	0.0056	0.0020	<0.0010	<0.0025	<0.0010	<0.0010	0.422
	22 Aug 2023	0.124	0.0109	0.458	0.582	-	0.673	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0006	<0.0012	<0.0012	<0.0005	0.0120	<0.002	0.0015	<0.0005	<0.0005	0.0108	0.0042	0.0280	<0.0009	0.0039	0.0134	0.0060	<0.0012	0.0007	<0.0005	0.643
	04 Mar 2024	0.0095	0.0008	0.0500	0.0595	-	0.0674	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0008	<0.001	0.0006	<0.0002	<0.0002	0.0009	0.0003	0.0019	<0.0002	0.0012	0.0008	0.0003	<0.0005	0.0003	<0.0002	0.0636
	09 Oct 2024	0.149	0.0145	2.05	2.20	-	2.31	-	<0.0098	<0.0098	<0.0098	<0.0098	<0.0246	<0.0246	<0.0098	<0.0246	<0.0246	<0.0098	0.0106	<0.049	<0.0098	<0.0098	<0.0098	0.0251	<0.0098	0.0225	<0.0098	0.0212	<0.0098	0.0145	<0.0246	<0.0098	<0.0098	2.26
SD110	14 Dec 2018	0.014	0.0015	0.17	-	0.184	-	0.1954	<0.002	<0.001	<0.005	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.0046	<0.001	<0.001	<0.002	0.0014	<0.001	0.0027	<0.001	<0.001	0.0012	<0.002	<0.002	<0.002	<0.002	-
	29 Oct 2020	0.0319	0.0012	0.0098	0.0417	0.0417	0.0756	0.0756	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	0.0081	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	0.0018	0.0131	<0.0005	<0.0005	0.0064	0.0033	<0.0012	<0.0005	<0.0005	0.0692
	29 Mar 2021	0.0016	0.0002	0.0074	0.0090	0.009	0.0100	0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0098
	16 Aug 2021	0.0091	0.0008	0.0542	0.0633	0.0633	0.0715	0.0715	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0013	<0.001	0.0005	<0.0002	<0.0002	0.0010	0.0003	0.0021	<0.0002	0.0003	0.0012	0.0005	<0.0005	<0.0002	0.0002	0.0683
	01 Mar 2022	0.0168	0.0017	0.161	0.178	-	0.191	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0012	<0.001	0.0013	<0.0002	<0.0002	0.0024	0.0003	0.0027	0.0003	0.0012	0.0015	0.0005	<0.0005	<0.0002	0.0003	0.184
	22 Aug 2022	0.0068	0.0008	0.0780	0.0848	-	0.0933	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0009	<0.0009	<0.0004	<0.0009	<0.0009	<0.0004	0.0011	<0.002	0.0010	<0.0004	0.0004	0.0008	<0.0004	0.0012	0.0004	0.0010	0.0006	<0.0004	<0.0009	0.0006	0.0006	0.0879
	06 Mar 2023	0.0018	0.0002	0.0130	0.0148	-	0.0157	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0154
	22 Aug 2023	0.0334	0.0034	0.669	0.702	-	0.726	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	0.0020	<0.002	0.0009	<0.0005	<0.0005	0.0057	0.0010	0.0047	<0.0008	0.0027	0.0024	0.0009	<0.0012	<0.0007	<0.0007	0.714
	04 Mar 2024	0.0015	<0.0002	0.0245	0.0260	-	0.0283	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0012	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	0.0002	<0.0005	0.0003	0.0002	0.0266
	09 Oct 2024	0.0425	0.0039	0.667	0.710	-	0.776	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0024	<0.0024	<0.0010	<0.0024	<0.0024	<0.0010	0.0050	<0.005	<0.0347	<0.0010	<0.0037	<0.0080	0.0016	0.0072	<0.0015	0.0405	0.0034	0.0022	<0.0024	0.0026	<0.0023	0.729
Lavarack Golf Course and Sporting Fields																																		
SD129	29 Oct 2020	<0.0002	<0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
	26 Mar 2021	<0.0002	<0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
	18 Aug 2021	<0.0002	<0.0002	0.0007	0.0007	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007
	02 Mar 2022	<0.0002	<0.0002	0.0004	0.0004	-	0.0004	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
	22 Aug 2022	0.0003	<0.0002	0.0009	0.0012	-	0.0014	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014
	06 Mar 2023	0.0002	<0.0002	0.0012	0.0014	-	0.0014	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014
	25 Aug 2023	0.0063	0.0004	0.0050	0.0113	-	0.0135	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	0.0004	<0.0002	<0.0002	0.0004	<0.0002	<0.0005	<0.0002	<0.0002	0.0126
	08 Mar 2024	<0.0002	<0.0002	0.0006	0.0006	-	0.0006	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
	09 Oct 2024	<0.0002	<0.0002	0.0004	0.0004	-	0.0004	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0020	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
SD130	29 Oct 2020	<0.0005	<0.0005	0.0021	0.0021	0.0021	0.0021	0.0021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0021
	26 Mar 2021	0.0012	<0.0002	0.0083	0.0095	0.0095	0.0095	0.0095	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0004	<0.0002	0.0095
	18 Aug 2021	<0.0002	<0.0002	0.0011	0.0011	0.0011	0.0011	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0011

Table 9
Historical Sediment Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																												
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.0002	0.0002	0.0002	0.0002		0.0002		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002
Location Code	Date																																				
	02 Mar 2022	0.0002	<0.0002	0.0010	0.0012	-	0.0012	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
	22 Aug 2022	0.0003	<0.0002	0.0015	0.0018	-	0.0018	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018
	08 Mar 2023	<0.0002	<0.0002	0.0034	0.0034	-	0.0034	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0034
	25 Aug 2023	0.0008	<0.0002	0.0062	0.0070	-	0.0070	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0012	<0.0005	<0.0002	<0.002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0009	<0.0012	<0.0005	<0.0005	0.0070
	04 Mar 2024	0.0006	<0.0002	0.0047	0.0053	-	0.0056	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0053
	09 Oct 2024	<0.0002	<0.0002	0.0007	0.0007	-	0.0007	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0007
Top, Middle and Lower Dams																																					
SD139	02 Oct 2018	0.0022	<0.001	0.02	-	0.0222	-	0.0222	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	29 Oct 2020	0.0024	<0.0010	0.0227	0.0251	0.0251	0.0251	0.0251	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	0.0251
	29 Mar 2021	0.0069	0.0005	0.0825	0.0894	0.0894	0.0940	0.094	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	0.0004	<0.0002	0.0002	0.0013	<0.0002	0.0008	<0.0002	<0.0002	0.0005	<0.0002	<0.0005	<0.0002	0.0004	0.0912
	16 Aug 2021	0.0044	<0.0010	0.0468	0.0512	0.0512	0.0512	0.0512	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	0.0512
	01 Mar 2022	0.0057	0.0004	0.0705	0.0762	-	0.0794	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	0.0004	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	0.0004	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0772
	22 Aug 2022	0.0049	<0.0004	0.0635	0.0684	-	0.0708	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	<0.0010	<0.0004	<0.0010	<0.0010	<0.0004	0.0005	<0.002	0.0004	<0.0004	<0.0004	<0.0004	0.0006	<0.0004	0.0009	<0.0004	<0.0004	<0.0004	<0.0004	<0.0010	<0.0004	<0.0004	0.0698
	06 Mar 2023	0.0330	0.0017	0.0682	0.101	-	0.120	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0039	<0.001	0.0003	<0.0002	<0.0002	0.0024	0.0003	0.0047	<0.0002	<0.0002	0.0042	0.0008	<0.0005	<0.0002	<0.0002	0.113
	22 Aug 2023	0.0022	0.0002	0.0134	0.0156	-	0.0164	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0164
	04 Mar 2024	0.0182	0.0017	0.148	0.166	-	0.178	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0007	<0.001	0.0004	0.0002	<0.0002	0.0055	0.0003	0.0011	0.0003	<0.0002	0.0009	0.0002	<0.0005	<0.0002	<0.0002	0.170
	09 Oct 2024	0.0096	0.0005	0.0688	0.0784	-	0.0833	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0014	<0.001	<0.0006	<0.0002	<0.0010	<0.0010	<0.0002	0.0014	<0.0002	<0.0010	0.0013	0.0003	<0.0005	<0.0010	<0.0002	0.0820
SD140	03 Oct 2018	0.0016	<0.001	0.033	-	0.0346	-	0.0346	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	05 Aug 2019	0.0015	<0.001	0.017	-	0.0185	-	0.0185	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	29 Oct 2020	0.0024	<0.0002	0.0216	0.0240	0.024	0.0250	0.025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0003	<0.0002	<0.0002	0.0002	<0.0002	0.0003	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0243
	29 Mar 2021	0.0039	0.0004	0.0508	0.0547	0.0547	0.0582	0.0582	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0011	<0.0002	<0.0002	0.0006	<0.0002	0.0006	<0.0002	<0.0002	0.0002	0.0003	<0.0005	<0.0003	0.0003	0.0560
	16 Aug 2021	0.0027	0.0002	0.0222	0.0249	0.0249	0.0267	0.0267	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	0.0004	<0.0002	<0.0002	0.0004	<0.0002	0.0004	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0257
	01 Mar 2022	0.0012	<0.0002	0.0167	0.0179	-	0.0184	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0179
	22 Aug 2022	0.0010	<0.0002	0.0170	0.0180	-	0.0180	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0180
	06 Mar 2023	0.0026	0.0003	0.0364	0.0390	-	0.0412	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0002	<0.0006	<0.0005	0.0002	0.0004	<0.001	0.0006	<0.0002	<0.0002	0.0003	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0008	0.0401
	22 Aug 2023	0.0041	0.0002	0.0316	0.0357	-	0.0364	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0003	<0.001	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	0.0005	<0.0002	<0.0002	<0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0364
	04 Mar 2024	0.0018	0.0002	0.0090	0.0108	-	0.0116	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0114
	09 Oct 2024	0.0030	0.0002	0.0245	0.0275	-	0.0298	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	0.0007	<0.0002	<0.0002	0.0004	<0.0002	0.0004	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0284
SD144	13 May 2021	0.0054	<0.0010	0.356	0.361	0.3614	0.365	0.365	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0010	<0.005	0.0013	<0.0010	<0.0010	0.0013	<0.0010	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	0.362
	16 Aug 2021	0.0002	<0.0002	0.0058	0.0060	0.006	0.0060	0.006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0060
	01 Mar 2022	0.0024	<0.0002	0.0325	0.0349	-	0.0349	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0009	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0002	0.0349
	22 Aug 2022	0.0004	<0.0002	0.0201	0.0205	-	0.0205	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0205
	10 Mar 2023	0.0090	0.0012	0.264	0.273	-	0.281	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0006	<0.001	0.0009	<0.0002	<0.0002	0.0030	<0.0002	0.0010	<0.0002	<0.0002	0.0008	0.0002	<0.0005	<0.0002	<0.0002	0.276
	22 Aug 2023	0.0012	<0.0002	0.0114	0.0126	-	0.0126	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0126
	04 Mar 2024	0.0023	0.0003	0.0393	0.0416	-	0.0436	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	0.0003	<0.0002	<0.0002	0.0003	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	0.0002	<0.0005	<0.0002	<0.0002	0.0430
	09 Oct 2024	0.0004	<0.0002	0.0052	0.0056	-	0.0056	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0056
Remaining on-Base																																					
SD113	12 Dec 2018	<0.001	<0.001	<0.002	-	0	-	0	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	28 Oct 2020	<0.0002	<0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005
	29 Mar 2021	<0.0002	<0.0002	0.0012	0.0012	0.0012	0.0012	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0012
	18 Aug 2021	<0.0002	<0.0002	0.0011	0.0011	0.0011	0.0011	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0011
	01 Mar 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	22 Aug 2022	<0.0002	<0.0002	0.0004	0.0004	-	0.0004	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004
	10 Mar 2023	<0.0002	<0.0002	0.0008	0.0008	-	0.0008	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0008
	22 Aug 2023	<0.0002	<0.0002	0.0003	0.0003	-	0.0003	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003
	04 Mar 2024	<0.0002	<0.0002	0.0008	0.0008	-	0.0008	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0008
	09 Oct 2024	<0.0002	<0.0002	0.0008	0.0008	-	0.0008	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0008
SD120	12 Dec 2018	<0.001	<0.001	<0.002	-	0	-	0	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	28 Oct 2020	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	29 Mar 2021	<0.0002	<0.0002	0.0014	0.0014	0.0014	0.0014	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0014
	18 Aug 2021	0.0003	<0.0002	0.0034	0.0037	0.0037	0.0037	0.0037	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0037
	01 Mar 2022	<0.0002	<0.0002	0.0006	0.0006	-	0.0006	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006
	03 Sep 2022	<0.0002	<0.0002	0.0019	0.0019	-	0.0019	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0019
	06 Mar 2023	0.0005	<0.0002	0.0037	0.0042	-	0.0042	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0042

Table 9
Historical Sediment Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																										
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.0002	0.0002	0.0002	0.0002		0.0002		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002
Location Code	Date																																		
	22 Aug 2023	<0.0002	<0.0002	0.0004	0.0004	-	0.0004	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
	04 Mar 2024	<0.0002	<0.0002	0.0009	0.0009	-	0.0009	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009
	09 Oct 2024	<0.0002	<0.0002	0.0018	0.0018	-	0.0018	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018
Base Boundary - On-base																																			
SD126	29 Oct 2020	<0.0002	<0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
	26 Mar 2021	<0.0002	<0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
	18 Aug 2021	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	02 Mar 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	23 Aug 2022	0.0002	<0.0002	0.0034	0.0036	-	0.0041	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0002	0.0003	0.0036
	08 Mar 2023	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	25 Aug 2023	<0.0002	<0.0002	0.0004	0.0004	-	0.0004	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
	04 Mar 2024	<0.0002	<0.0002	0.0006	0.0006	-	0.0006	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
	09 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
SD128	29 Oct 2020	<0.0002	<0.0002	0.0010	0.0010	0.001	0.0010	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
	26 Mar 2021	0.0004	<0.0002	0.0040	0.0044	0.0044	0.0054	0.0054	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0010	<0.0002	<0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0003	<0.0002	0.0044
	18 Aug 2021	0.0007	<0.0002	0.0034	0.0041	0.0041	0.0045	0.0045	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0004	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0045
	02 Mar 2022	0.0003	<0.0002	0.0014	0.0017	-	0.0017	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0017
	23 Aug 2022	0.0003	<0.0002	0.0026	0.0029	-	0.0029	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0029
	06 Mar 2023	0.0006	0.0002	0.0125	0.0131	-	0.0138	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0135
	25 Aug 2023	0.0003	<0.0002	0.0034	0.0037	-	0.0039	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0037
	04 Mar 2024	0.0004	<0.0002	0.0141	0.0145	-	0.0145	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0145
	09 Oct 2024	0.0005	<0.0002	0.0019	0.0024	-	0.0024	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0024
SD132	16 Dec 2018	<0.001	<0.001	0.02	-	0.02	-	0.0254	<0.002	<0.001	<0.005	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.0054	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	29 Oct 2020	0.0008	<0.0002	0.0031	0.0039	0.0039	0.0039	0.0039	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0039
	01 Apr 2021	0.0004	<0.0002	0.0033	0.0037	0.0037	0.0037	0.0037	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0037
	22 Apr 2022	0.0002	<0.0002	0.0048	0.0050	-	0.0050	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0050
	22 Aug 2022	0.0025	<0.0002	0.0108	0.0133	-	0.0147	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0004	<0.001	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0141
	06 Mar 2023	0.0008	<0.0002	0.0094	0.0102	-	0.0105	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0105
	25 Aug 2023	0.0008	<0.0002	0.0036	0.0044	-	0.0044	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0044
	04 Mar 2024	<0.0002	<0.0002	0.0019	0.0019	-	0.0019	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0019
	09 Oct 2024	0.0085	0.0004	0.0380	0.0465	-	0.0521	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0007	<0.001	0.0005	<0.0002	<0.0002	0.0012	<0.0002	0.0008	<0.0002	<0.0002	0.0007	<0.0002	<0.0005	0.0013	<0.0002	0.0484
SD133	29 Oct 2020	<0.0002	<0.0002	0.0007	0.0007	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007
	29 Mar 2021	<0.0002	<0.0002	0.0010	0.0010	0.001	0.0010	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
	16 Aug 2021	<0.0002	<0.0002	0.0007	0.0007	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007
	01 Mar 2022	<0.0002	<0.0002	0.0006	0.0006	-	0.0006	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
	23 Aug 2022	<0.0002	<0.0002	0.0020	0.0020	-	0.0020	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0020
	06 Mar 2023	0.0011	<0.0002	0.0112	0.0123	-	0.0129	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0006	<0.0002	0.0123
	25 Aug 2023	<0.0002	<0.0002	0.0024	0.0024	-	0.0024	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0024
	04 Mar 2024	<0.0002	<0.0002	0.0005	0.0005	-	0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
	09 Oct 2024	<0.0002	<0.0002	0.0006	0.0006	-	0.0006	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
SD134	29 Oct 2020	<0.0002	<0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
	01 Apr 2021	<0.0010	<0.0010	0.0018	0.0018	0.0018	0.0018	0.0018	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	0.0018
	18 Aug 2021	<0.0002	<0.0002	0.0004	0.0004	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
	01 Mar 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	22 Aug 2022	<0.0002	<0.0002	0.0006	0.0006	-	0.0009	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
	08 Mar 2023	<0.0002	<0.0002	0.0012	0.0012	-	0.0012	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
	22 Aug 2023	<0.0002	<0.0002	<0.0003	<0.0002	-	0.0003	-	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005	<0.0025	<0.0002	<0.0005	<0.0025	<0.0002	<0.0002	<0.001	<0.0002	<0.0010	<0.0010	<0.0002	<0.0002	0.0003	<0.0002	<0.0010	<0.0002	<0.0002	<0.0025	<0.0010	<0.0010	0.0003
	04 Mar 2024	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	09 Oct 2024	<0.0002	<0.0002	<0.0010	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
SD135	12 Dec 2018	<0.001	<0.001	<0.002	-	0	-	0	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	-
	28 Oct 2020	<0.0002	<0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
	29 Mar 2021	0.0006	<0.0002	0.0025	0.0031	0.0031	0.0031	0.0031	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0031
	18 Aug 2021	<0.0002	<0.0002	0.0009	0.0009	0.0009	0.0009	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009
	01 Mar 2022	<0.0002	<0.0002	0.0012	0.0012	-	0.0012	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012

Table 9
Historical Sediment Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																										
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.0002	0.0002	0.0002	0.0002		0.0002		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002
Location Code	Date																																		
	22 Aug 2022	<0.0002	<0.0002	0.0014	0.0014	-	0.0014	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014
	06 Mar 2023	0.0012	<0.0002	0.0014	0.0026	-	0.0029	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0029
	22 Aug 2023	<0.0002	<0.0002	0.0009	0.0009	-	0.0009	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009
	04 Mar 2024	<0.0002	<0.0002	0.0010	0.0010	-	0.0010	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
	09 Oct 2024	<0.0002	<0.0002	0.0004	0.0004	-	0.0004	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
SD136	17 Dec 2018	<0.001	<0.001	<0.002	-	0	-	0.0492	<0.002	<0.001	0.0092	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.04	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	28 Oct 2020	0.0003	<0.0002	0.0015	0.0018	0.0018	0.0018	0.0018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018
	26 Mar 2021	0.0008	<0.0002	0.0051	0.0059	0.0059	0.0064	0.0064	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0064
	16 Aug 2021	0.0015	0.0002	0.0107	0.0122	0.0122	0.0129	0.0129	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0129
	02 Mar 2022	<0.0002	<0.0002	0.0008	0.0008	-	0.0008	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008
	23 Aug 2022	0.0008	<0.0002	0.0075	0.0083	-	0.0083	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0083
	06 Mar 2023	0.0003	<0.0002	0.0003	0.0006	-	0.0006	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0006
	25 Aug 2023	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	04 Mar 2024	<0.0002	<0.0002	0.0003	0.0003	-	0.0003	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
	09 Oct 2024	0.0017	<0.0002	0.0005	0.0022	-	0.0022	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0022
Off-Base																																			
SD203	28 Nov 2017	0.0012	<0.001	0.012	-	0.0132	-	0.0132	-	-	<0.001	<0.001	<0.002	<0.005	-	<0.002	<0.005	-	<0.001	<0.002	-	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002	<0.002	<0.002	<0.002	-
	26 Sep 2018	<0.001	<0.001	0.0024	-	0.0024	-	0.0024	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	02 Nov 2020	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	29 Mar 2021	0.0005	<0.0002	0.0026	0.0031	0.0031	0.0031	0.0031	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0031
	19 Aug 2021	<0.0002	<0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
	02 Mar 2022	<0.0002	<0.0002	0.0002	0.0002	-	0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0002
	22 Aug 2022	<0.0002	<0.0002	0.0005	0.0005	-	0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
	08 Mar 2023	0.0012	<0.0002	0.0084	0.0096	-	0.0098	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0096
	21 Aug 2023	<0.0002	<0.0002	0.0015	0.0015	-	0.0015	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0015
	04 Mar 2024	<0.0002	<0.0002	0.0004	0.0004	-	0.0004	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
	09 Oct 2024	0.0016	<0.0002	0.0116	0.0132	-	0.0132	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0132
SD205	28 Nov 2017	<0.001	<0.001	<0.002	-	0	-	0	-	-	<0.001	<0.001	<0.002	<0.005	-	<0.002	<0.005	-	<0.001	<0.002	-	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002	<0.002	<0.002	<0.002	-
	27 Sep 2018	<0.001	<0.001	<0.002	-	0	-	0	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	02 Nov 2020	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	29 Mar 2021	<0.0002	<0.0002	0.0007	0.0007	0.0007	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007
	19 Aug 2021	0.0002	0.0002	0.0017	0.0019	0.0019	0.0021	0.0021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0021
	02 Mar 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	22 Aug 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	09 Mar 2023	<0.0002	<0.0002	0.0008	0.0008	-	0.0008	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008
	21 Aug 2023	<0.0002	<0.0002	0.0026	0.0026	-	0.0026	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0026
	09 Oct 2024	<0.0002	<0.0002	0.0004	0.0004	-	0.0004	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0002	<0.0012	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
SD211	30 Nov 2017	<0.001	<0.001	<0.002	-	0	-	0	-	-	<0.001	<0.001	<0.002	<0.005	-	<0.002	<0.005	-	<0.001	<0.002	-	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002	<0.002	<0.002	<0.002	-
	02 Nov 2020	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	01 Apr 2021	<0.0005	<0.0005	0.0015	0.0015	0.0015	0.0015	0.0015	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0015
	19 Aug 2021	<0.0002	<0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
	03 Mar 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	25 Aug 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	09 Mar 2023	<0.0002	<0.0002	0.0010	0.0010	-	0.0010	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
	22 Aug 2023	<0.0002	<0.0002	0.0004	0.0004	-	0.0004	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
	07 Mar 2024	<0.0002	<0.0002	0.0008	0.0008	-	0.0010	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008
	09 Oct 2024	<0.0002	<0.0002	0.0036	0.0036	-	0.0063	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0021	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.0002	0.0036
SD212	02 Nov 2020	<0.0002	<0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
	01 Apr 2021	<0.0002	<0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0005
	19 Aug 2021	<0.0002	<0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0002
	03 Mar 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	25 Aug 2022	<0.0002	<0.0002	0.0003	0.0003	-	0.0003	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
	09 Mar 2023	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	22 Aug 2023	<0.0002	<0.0002	0.0003	0.0003	-	0.0003	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003

Table 9
Historical Sediment Analytical Results
Lavarack Barracks

		Regulated PFAS Compounds							Other PFAS Compounds																								
		Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.0002	0.0002	0.0002	0.0002		0.0002		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002
Location Code	Date																																	
	07 Mar 2024	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	09 Oct 2024	<0.0002	<0.0002	0.0010	0.0010	-	0.0010	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
SD217	17 Dec 2018	<0.001	<0.001	0.003	-	0.003	-	0.014	<0.002	<0.001	<0.005	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.011	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	02 Nov 2020	<0.0005	<0.0005	0.0010	0.0010	0.001	0.0010	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	0.0010
	29 Mar 2021	<0.0002	<0.0002	0.0011	0.0011	0.0011	0.0011	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0011
	19 Aug 2021	<0.0002	<0.0002	0.0004	0.0004	0.0004	0.0004	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
	02 Mar 2022	<0.0002	<0.0002	0.0009	0.0009	-	0.0009	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009
	22 Aug 2022	0.0002	<0.0002	0.0018	0.0020	-	0.0022	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0022
	06 Mar 2023	<0.0002	<0.0002	0.0012	0.0012	-	0.0012	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
	21 Aug 2023	0.0011	0.0007	0.0024	0.0035	-	0.0052	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0050
	04 Mar 2024	0.0005	0.0010	0.0027	0.0032	-	0.0042	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0042
	09 Oct 2024	<0.0002	<0.0002	0.0007	0.0007	-	0.0007	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0002	<0.0013	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0007
SD220	19 Sep 2018	0.0036	<0.001	0.024	-	0.0276	-	0.0326	<0.002	<0.001	0.0011	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	0.0039	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	02 Nov 2020	0.0025	<0.0002	0.0130	0.0155	0.0155	0.0158	0.0158	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0158
	01 Apr 2021	0.0068	<0.0005	0.0963	0.103	0.1031	0.106	0.1055	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0013	<0.0005	<0.0013	<0.0013	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	0.0024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	0.103
	16 Aug 2021	0.0074	0.0003	0.0336	0.0410	0.041	0.0465	0.0465	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0011	<0.001	<0.0002	<0.0002	0.0004	0.0008	0.0002	0.0009	0.0006	<0.0002	0.0007	<0.0002	<0.0005	0.0002	0.0003	0.0435
	02 Mar 2022	0.0008	<0.0002	0.0042	0.0050	-	0.0050	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0050
	22 Aug 2022	0.0062	<0.0002	0.0228	0.0290	-	0.0317	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0005	<0.001	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	0.0008	0.0006	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	0.0303
	09 Mar 2023	0.0056	0.0003	0.0166	0.0222	-	0.0235	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0010	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0225
	21 Aug 2023	0.0059	<0.0002	0.0192	0.0251	-	0.0276	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0024	<0.0024	<0.0010	<0.0024	<0.0024	<0.0010	0.0004	<0.001	<0.0002	<0.0002	<0.0002	<0.0010	0.0003	<0.0002	0.0011	0.0003	<0.0002	0.0004	<0.0002	<0.0005	<0.0010	<0.0010	0.0266
	04 Mar 2024	0.0061	<0.0002	0.0050	0.0111	-	0.0122	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	0.0004	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0118
	08 Oct 2024	0.0025	<0.0002	0.0098	0.0123	-	0.0123	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0123
SD227	24 Jan 2018	<0.001	<0.001	<0.002	-	0	-	0	-	-	<0.001	<0.001	<0.002	<0.005	-	<0.002	<0.005	-	<0.001	<0.002	-	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002	<0.002	<0.002	<0.002	-
	02 Aug 2018	<0.001	<0.001	<0.002	-	0	-	0	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	07 Aug 2019	<0.001	0.01	0.014	-	0.014	-	0.054	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	0.0022	<0.001	<0.002	<0.001	0.018	0.0046	<0.001	0.0015	0.002	0.0017	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	03 Nov 2020	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	26 Mar 2021	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	18 Aug 2021	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	28 Feb 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	23 Aug 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	08 Mar 2023	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	22 Aug 2023	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	07 Mar 2024	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	15 Oct 2024	<0.0002	<0.0002	0.0009	0.0009	-	0.0014	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
SD232	19 Sep 2018	<0.001	<0.001	<0.002	-	0	-	0.002	<0.002	<0.001	0.002	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	02 Nov 2020	0.0002	<0.0002	0.0023	0.0025	0.0025	0.0025	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0025
	29 Mar 2021	<0.0002	<0.0002	0.0018	0.0018	0.0018	0.0026	0.0026	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0005	<0.0002	<0.0002	0.0024
	16 Aug 2021	<0.0002	<0.0002	0.0018	0.0018	0.0018	0.0018	0.0018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0018
	02 Mar 2022	0.0007	<0.0002	0.0007	0.0014	-	0.0014	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0014
	22 Aug 2022	0.0002	<0.0002	0.0010	0.0012	-	0.0012	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
	09 Mar 2023	0.0003	<0.0002	0.0032	0.0035	-	0.0035	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0035
	21 Aug 2023	0.0007	0.0002	0.0025	0.0032	-	0.0034	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0034
	04 Mar 2024	<0.0002	<0.0002	0.0008	0.0008	-	0.0008	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0008
	08 Oct 2024	<0.0002	<0.0002	0.0012	0.0012	-	0.0012	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005	<0.0002	<0.0025	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0012
SD233	19 Sep 2018	<0.001	<0.001	<0.002	-	0	-	0	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	02 Nov 2020	0.0002	<0.0002	0.0020	0.0022	0.0022	0.0022	0.0022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0022
	29 Mar 2021	0.0023	0.0002	0.0267	0.0290	0.029	0.0300	0.03	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0297
	16 Aug 2021	0.0011	<0.0002	0.0104	0.0115	0.0115	0.0115	0.0115	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0115
	02 Mar 2022	0.0010	<0.0002	0.0071	0.0081	-	0.0081	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0081
	22 Aug 2022	0.0020	<0.0002	0.0184	0.0204	-	0.0210	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0207
	15 Mar 2023	0.0022	<0.0002	0.0084	0.0106	-	0.0111	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0109
	21 Aug 2023	0.0028	0.0003	0.0206	0.0234	-	0.0253	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0003	<0.001	0.0003	<0.0002	<0.0002	0.0004	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	0.0243
	04 Mar 2024	0.0040	<0.0002	0.0163	0.0203	-	0.0209	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0205
	08 Oct 2024	0.0020	<0.0002	0.0142	0.0162	-	0.0166	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0166

Table 9
Historical Sediment Analytical Results
Lavarack Barracks

	Regulated PFAS Compounds							Other PFAS Compounds																											
	Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctanoic Acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	PFAS n=28 (Sum of total - calculated)	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	N-Methyl PFO sulfonamide (MeFOSA)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of WA DER PFAS (n=10)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0002	0.0002	0.0002	0.0002		0.0002		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002
Location Code	Date																																		
SD242	24 Aug 2018	<0.001	<0.001	<0.002	-	0	-	0	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	02 Nov 2020	<0.0002	<0.0002	0.0010	0.0010	0.001	0.0010	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
	29 Mar 2021	<0.0002	<0.0002	0.0034	0.0034	0.0034	0.0042	0.0042	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	0.0002	0.0034
	16 Aug 2021	<0.0002	<0.0002	0.0023	0.0023	0.0023	0.0023	0.0023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0023
	22 Apr 2022	<0.0002	<0.0002	0.0004	0.0004	-	0.0004	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
	22 Aug 2022	0.0002	<0.0002	0.0051	0.0053	-	0.0057	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0053
	09 Mar 2023	<0.0002	<0.0002	0.0010	0.0010	-	0.0010	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0010
	21 Aug 2023	0.0006	<0.0002	0.0054	0.0060	-	0.0060	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0060
	04 Mar 2024	<0.0002	<0.0002	0.0047	0.0047	-	0.0047	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0047
	08 Oct 2024	0.0006	0.0003	0.0035	0.0041	-	0.0044	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0044
SD243	24 Aug 2018	<0.001	<0.001	<0.002	-	0	-	0	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	02 Nov 2020	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	29 Mar 2021	<0.0002	<0.0002	0.0009	0.0009	0.0009	0.0009	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0009
	16 Aug 2021	<0.0002	<0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
	02 Mar 2022	<0.0002	<0.0002	0.0003	0.0003	-	0.0003	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003
	22 Aug 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	09 Mar 2023	<0.0002	<0.0002	0.0004	0.0004	-	0.0004	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0004
	21 Aug 2023	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	04 Mar 2024	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	08 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0002	<0.0012	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
SD244	02 Aug 2018	<0.001	<0.001	<0.002	-	0	-	0	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	03 Nov 2020	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	26 Mar 2021	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	18 Aug 2021	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	28 Feb 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	23 Aug 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	08 Mar 2023	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	22 Aug 2023	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	07 Mar 2024	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	15 Oct 2024	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
SD245	03 Aug 2018	<0.001	<0.001	<0.002	-	0	-	0	<0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	-
	03 Nov 2020	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	26 Mar 2021	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	18 Aug 2021	<0.0002	<0.0002	<0.0002	<0.0002	0	<0.0002	0	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	28 Feb 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	23 Aug 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	08 Mar 2023	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	22 Aug 2023	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
	07 Mar 2024	<0.0005	<0.0005	<0.0005	<0.0005	-	<0.0005	-	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
	15 Oct 2024	<0.0002	<0.0002	<0.0010	<0.0002	-	<0.0002	-	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0020	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002

Table 10
Groundwater Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																								Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines **(Sum PFHxS and PFOS)** Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																											
EQL		0.01	0.01	0.01		0.01																											
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																											
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																											
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																												Risk Characterisation	Immediate Response Actions
Location Code	Date																															
Eastern PFAS Contamination Area																																
MW018	12 Sep 2017	30.40	1.01	42.70	-	55.10																											
	30 Aug 2018	13.00	0.46	21.10		-																											
		15.00	0.59	22.90		-																											
	17 May 2019	23.60	1.38	48.90	48.90	73.80																											
	12 Jul 2019	2.00	0.06	2.99		-																											
	04 Dec 2019	1.00	0.04	1.58		-																											
	28 Oct 2020	22.10	1.12	37.40	37.40	53.70																											
	31 Mar 2021	22.80	0.87	36.60	36.60	48.40																											
	18 Aug 2021	4.69	0.19	7.35	7.35	9.76																											
	04 Mar 2022	47.90	1.88	74.40	-	94.60																											
	25 Aug 2022	2.24	0.07	3.14	-	3.90																											
	09 Mar 2023	38.40	1.86	64.40	-	93.50																											
	23 Aug 2023	1.47	0.05	2.14	-	2.66																											
	07 Mar 2024	5.97	0.20	8.65	-	10.90																											
	17 Oct 2024	1.71	0.06	2.48	-	3.12	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	30.80	1.40	48.90		86.61																											
	65th%ile	22.42	0.93	36.96		54.89																											
MW112	19 Sep 2018	2.00	0.19	7.40		-																											
		2.00	0.21	6.90		-																											
	16 Oct 2024	0.56	0.06	2.24	-	3.32	Yes	No	No	Yes	No	No	No	No	-	No	No	No	No	No	No	No	No	-	-	-	-	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	2.00	0.21	7.33		-																											
	65th%ile	2.00	0.20	7.23		-																											
MW114	18 Sep 2018	0.38	0.45	5.48		-																											
	28 Oct 2020	0.48	0.39	5.77	5.77	11.50																											
	31 Mar 2021	2.15	1.32	17.40	17.35	33.10																											
	18 Aug 2021	0.21	0.20	2.78	2.78	5.91																											
	04 Mar 2022	0.91	0.67	7.81	-	15.50																											
	24 Aug 2022	2.09	1.07	14.70	-	27.30																											
	09 Mar 2023	4.19	2.02	26.10	-	49.70																											
	24 Aug 2023	3.97	2.39	22.00	-	43.90																											
	07 Mar 2024	3.88	1.47	21.70	-	38.20																											
	16 Oct 2024	1.84	1.18	12.00	-	25.90	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	3.95	1.91	21.94		43.62																											
	65th%ile	2.50	1.35	18.26		35.91																											
MW115	12 Oct 2018	0.52	0.04	1.52		-																											
	13 Oct 2018	0.57	0.02	1.57		-																											
	10 Jul 2019	0.85	0.02	1.36		-																											
	05 Dec 2019	0.81	0.02	1.58		-																											
	28 Oct 2020	0.55	0.02	1.09	1.09	1.95																											
	31 Mar 2021	0.46	0.01	0.78	0.78	1.37																											
	18 Aug 2021	0.34	0.01	0.61	0.61	1.02																											
	04 Mar 2022	0.20	0.01	0.56	-	0.94																											
	24 Aug 2022	0.10	0.01	0.26	-	0.47																											
	08 Mar 2023	0.16	0.01	0.50	-	0.85																											
	24 Aug 2023	0.14	0.01	0.56	-	0.91																											
	08 Mar 2024	0.12	0.01	0.42	-	0.75																											
	16 Oct 2024	0.16	0.01	0.58	-	1.11	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.65	0.02	1.54		1.35																											
	65th%ile	0.52	0.02	1.13		0.98																											
	13 Sep 2018	0.02	0.01	0.02		-																											

Table 10
Groundwater Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																						Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																										
EQL		0.01	0.01	0.01		0.01																										
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																											
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																											
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																													
Location Code	Date																															
MW116	10 Jul 2019	0.02	0.01	0.03		-																										
	28 Oct 2020	0.01	0.01	0.08	0.08	0.20																										
	31 Mar 2021	0.01	0.01	0.07	0.07	0.17																										
	18 Aug 2021	0.01	0.01	0.13	0.13	0.36																										
	04 Mar 2022	0.02	0.01	0.13	-	0.32																										
	24 Aug 2022	0.01	0.01	0.10	-	0.26																										
	10 Mar 2023	0.01	0.01	0.11	-	0.33																										
	24 Aug 2023	0.02	0.01	0.18	-	0.41																										
	08 Mar 2024	0.02	0.01	0.23	-	0.57																										
	16 Oct 2024	0.01	0.01	0.19	-	0.67	Yes	No	No	No	No	No	No	No	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	NR	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring. Note that increasing PFAS concentrations are relatively low so risk response downgraded from high to elevated
	85th%ile	0.02	0.01	0.16		0.41																										
	65th%ile	0.02	0.01	0.13		0.35																										
MW139	12 Sep 2018	2.70	0.04	4.30		-																										
	11 Jul 2019	2.10	0.04	3.60		-																										
	05 Dec 2019	2.20	0.03	3.70		-																										
	28 Oct 2020	2.04	0.04	3.36	3.36	3.89																										
	31 Mar 2021	2.85	0.04	4.32	4.32	4.83																										
	18 Aug 2021	2.13	0.04	3.47	3.47	3.98																										
	03 Mar 2022	2.32	0.04	3.55	-	3.95																										
	25 Aug 2022	1.70	0.03	2.66	-	2.98																										
	09 Mar 2023	1.93	0.03	2.97	-	3.36																										
	24 Aug 2023	2.15	0.04	3.25	-	3.62																										
	08 Mar 2024	1.39	0.02	1.92	-	2.09																										
	16 Oct 2024	1.81	0.03	2.72	-	3.01	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	2.51	0.04	4.00		3.98																										
	65th%ile	2.18	0.04	3.58		3.92																										
Former B Squadron																																
MW135	10 Oct 2018	2.00	0.09	3.80		-																										
		1.80	0.09	3.50		-																										
	10 Jul 2019	3.90	0.19	9.40		-																										
	04 Dec 2019	2.60	0.12	4.60		-																										
	28 Oct 2020	2.37	0.07	4.10	4.10	4.69																										
	31 Mar 2021	9.54	0.34	23.50	23.54	27.20																										
	18 Aug 2021	2.41	0.07	4.11	4.11	4.74																										
	04 Mar 2022	1.78	0.05	2.82	-	3.25																										
	24 Aug 2022	0.55	0.02	1.18	-	1.40																										
	09 Mar 2023	11.80	0.15	14.20	-	15.50																										
	24 Aug 2023	0.42	0.02	0.93	-	1.11																										
	07 Mar 2024	12.70	0.14	15.00	-	16.10																										
	16 Oct 2024	0.21	0.01	0.68	-	0.85	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	Yes	Yes	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	10.33	0.16	14.48		16.07																										
	65th%ile	2.80	0.12	5.32		10.66																										
Former Fire Station																																
	17 Jul 2018	0.83	0.05	2.13		-																										
	31 Aug 2018	21.00	2.40	76.00		-																										
	12 Jul 2019	26.00	1.60	75.00		-																										
	03 Dec 2019	26.00	1.60	68.00		-																										
	29 Oct 2020	25.80	1.65	63.40	63.40	91.30																										

Table 10
Groundwater Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																								Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines **(Sum PFHxS and PFOS)** Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																											
EQL		0.01	0.01	0.01		0.01																											
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																											
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																											
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																													
Location Code	Date																															
MW105	31 Mar 2021	29.60	1.64	60.90	60.90	84.00																										
	18 Aug 2021	27.30	1.62	60.70	60.70	86.40																										
	03 Mar 2022	16.90	1.03	37.80	-	53.60																										
	24 Aug 2022	25.30	1.65	60.70	-	86.10																										
	09 Mar 2023	28.00	1.80	67.70	-	98.30																										
	24 Aug 2023	37.60	3.10	99.20	-	143.00																										
	07 Mar 2024	27.00	1.92	66.80	-	95.00																										
	16 Oct 2024	31.00	3.13	88.70	-	136.00	Yes	Yes	No	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	28.56	2.09	75.35		98.14																										
	65th%ile	27.05	1.67	67.75		93.34																										
MW128	18 Jul 2018	22.00	0.36	27.00		-																										
	31 Aug 2018	380.00	18.00	620.00		-																										
		490.00	19.00	780.00		-																										
	12 Jul 2019	510.00	17.00	750.00		-																										
	03 Dec 2019	570.00	27.00	940.00		-																										
	29 Oct 2020	483.00	17.80	731.00	731.00	919.00																										
	31 Mar 2021	876.00	26.90	1300.00	1295.00	1620.00																										
	18 Aug 2021	461.00	19.40	767.00	767.00	1000.00																										
	03 Mar 2022	67.20	4.52	150.00	-	199.00																										
	12 Jul 2022	52.40	5.32	152.00	151.60	220.00																										
	24 Aug 2022	152.00	8.35	315.00	-	428.00																										
	09 Mar 2023	6.05	0.15	8.80	-	11.40																										
	24 Aug 2023	786.00	32.70	1200.00	-	1490.00																										
	07 Mar 2024	763.00	27.10	1100.00	-	1320.00																										
	16 Oct 2024	36.10	2.71	78.60	-	114.00	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	764.15	27.01	1145.00		1456.00																										
	65th%ile	499.00	19.18	772.85		1064.00																										
MW345	17 Jan 2022	6.60	0.82	17.80	17.80	27.50																										
	19 May 2022	9.62	0.88	22.50	22.52	32.80																										
	16 Oct 2024	6.25	0.60	15.10	-	22.40	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	-	-	-	-	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	9.17	0.87	21.80		32.01																										
	65th%ile	8.56	0.86	20.86		30.95																										
Former Fire Training Area																																
MW131	21 Sep 2018	5.30	0.26	7.40		-																										
		5.30	0.27	7.90		-																										
	09 Jul 2019	16.00	0.79	23.20		-																										
	03 Dec 2019	11.00	0.46	15.00		-																										
	28 Oct 2020	5.88	0.28	8.83	8.83	11.80																										
	31 Mar 2021	8.08	0.47	13.00	13.05	18.80																										
	19 Aug 2021	5.32	0.27	8.12	8.12	11.20																										
	03 Mar 2022	5.75	0.39	9.30	-	13.30																										
	26 Aug 2022	163.00	20.70	403.00	-	656.00																										
	07 Oct 2022	45.30	3.60	82.10	-	124.00																										
	09 Mar 2023	75.50	5.98	127.00	-	190.00																										
	25 Aug 2023	36.20	3.35	63.60	-	97.00																										
	07 Mar 2024	3.69	0.69	9.64	-	16.50																										
	16 Oct 2024	24.50	2.47	40.90	-	61.70	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	51.34	4.08	91.08		176.80																										
	65th%ile	15.00	0.77	21.56		102.40																										
Former Helicopter Squadron																																
	21 Sep 2018	1.90	0.19	4.50		-																										

Table 10
Groundwater Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (**Sum PFHxS and PFOS**) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																											Risk Characterisation	Immediate Response Actions
EQL		0.01	0.01	0.01		0.01																												
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																													
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																													
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																															
Location Code	Date																																	
MW102	21 Sep 2018	3.30	0.17	5.60		-																												
	08 Jul 2019	0.36	0.12	1.96		-																												
	03 Dec 2019	0.37	0.14	3.17		-																												
	29 Oct 2020	0.88	0.02	1.42	1.42	1.86																												
	31 Mar 2021	0.98	0.04	1.71	1.71	2.38																												
	18 Aug 2021	1.39	0.20	4.35	4.35	6.72																												
	03 Mar 2022	1.47	0.18	3.74	-	5.48																												
	24 Aug 2022	1.04	0.16	3.15	-	4.78																												
	09 Mar 2023	0.42	0.03	0.84	-	1.20																												
	24 Aug 2023	1.92	0.19	3.77	-	5.39																												
	07 Mar 2024	0.10	0.01	0.16	-	0.16																												
	16 Oct 2024	0.39	0.03	0.77	-	1.07	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	1.91	0.19	4.40		5.48																												
	65th%ile	1.40	0.17	3.74		5.12																												
Lavarack Golf Course and Sporting Fields																																		
MW065	14 Sep 2017	17.50	0.37	57.70	-	64.00																												
	17 Oct 2018	8.70	0.25	17.70		-																												
		8.20	0.22	17.40		-																												
	04 Dec 2019	7.50	0.19	15.70		-																												
	29 Oct 2020	8.23	0.18	15.40	15.40	18.40																												
	31 Mar 2021	10.80	0.23	18.00	17.99	21.70																												
	18 Aug 2021	8.78	0.24	16.20	16.15	19.60																												
	03 Mar 2022	9.00	0.29	17.00	-	21.30																												
	25 Aug 2022	9.83	0.24	17.00	-	20.70																												
	08 Mar 2023	12.90	0.30	21.80	-	26.50																												
	24 Aug 2023	9.93	0.33	19.70	-	24.50																												
	08 Mar 2024	7.54	0.09	9.56	-	10.60																												
	16 Oct 2024	10.20	0.33	21.80	-	27.50	Yes	Yes	No	Yes	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	NR	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	11.54	0.31	20.44		26.10																												
	65th%ile	9.85	0.26	17.75		22.26																												
MW120	13 Sep 2018	0.02	0.01	0.17		-																												
	12 Jul 2019	0.03	0.01	0.16		-																												
	29 Oct 2020	0.14	0.01	0.27	0.27	0.37																												
	31 Mar 2021	0.12	0.01	0.28	0.28	0.52																												
	18 Aug 2021	0.12	0.01	0.21	0.21	0.31																												
	03 Mar 2022	0.12	0.01	0.19	-	0.26																												
	24 Aug 2022	0.10	0.01	0.16	-	0.26																												
	08 Mar 2023	0.08	0.01	0.11	-	0.14																												
	24 Aug 2023	0.12	0.01	0.16	-	0.19																												
	08 Mar 2024	0.08	0.01	0.11	-	0.15																												
	16 Oct 2024	0.07	0.01	0.09	-	0.12	Yes	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.12	0.01	0.25		0.37																												
	65th%ile	0.12	0.01	0.19		0.29																												
MW121	13 Sep 2018	0.04	0.01	0.29		-																												
	09 Jul 2019	0.02	0.01	0.30		-																												
	29 Oct 2020	0.06	0.01	0.39	0.39	0.48																												
	31 Mar 2021	0.06	0.01	0.33	0.33	0.40																												
	18 Aug 2021	0.06	0.01	0.34	0.34	0.42																												
	03 Mar 2022	0.06	0.01	0.32	-	0.40																												
	24 Aug 2022	0.07	0.01	0.37	-	0.45																												
	08 Mar 2023	0.08	0.01	0.50	-	0.65																												
	24 Aug 2023	0.11	0.01	0.41	-	0.49																												
	08 Mar 2024	0.07	0.01	0.33	-	0.41																												

Table 10
Groundwater Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																								Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines **(Sum PFHxS and PFOS)** Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																											
EQL		0.01	0.01	0.01		0.01																											
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																											
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																											
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																												Risk Characterisation	Immediate Response Actions
Location Code	Date																															
	16 Oct 2024	0.04	0.01	0.68	-	0.98	Yes	No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	No	NR	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	0.08	0.01	0.40		0.49																										
	65th%ile	0.07	0.01	0.37		0.47																										
MW122	26 Sep 2018	3.80	0.11	5.30		-																										
	09 Jul 2019	3.10	0.08	4.30		-																										
	05 Dec 2019	3.10	0.10	4.60		-																										
	29 Oct 2020	1.89	0.05	2.65	2.65	3.07																										
	31 Mar 2021	0.10	0.01	0.16	0.16	0.21																										
	18 Aug 2021	0.85	0.03	1.24	1.24	1.51																										
	03 Mar 2022	2.20	0.01	2.99	-	3.10																										
	24 Aug 2022	2.88	0.08	4.13	-	4.83																										
	08 Mar 2023	2.37	0.07	3.31	-	3.86																										
	24 Aug 2023	3.56	0.10	4.70	-	5.62																										
	08 Mar 2024	0.01	0.01	0.01	-	0.01																										
	16 Oct 2024	2.78	0.06	3.83	-	4.44	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	3.33	0.10	4.65		4.78																										
	65th%ile	2.99	0.08	4.22		3.52																										
MW123I	18 Sep 2018	0.10	0.01	0.30		-																										
	10 Jul 2019	0.02	0.01	1.20		-																										
	05 Dec 2019	0.02	0.01	1.00		-																										
	28 Oct 2020	0.01	0.01	0.70	0.70	1.38																										
	31 Mar 2021	0.01	0.01	0.37	0.37	0.73																										
	18 Aug 2021	0.01	0.01	0.51	0.51	0.98																										
	03 Mar 2022	0.01	0.01	0.99	-	2.20																										
	24 Aug 2022	0.01	0.01	0.75	-	1.28																										
	08 Mar 2023	0.04	0.06	14.40	-	26.10																										
	24 Aug 2023	0.01	0.01	0.41	-	0.83																										
	08 Mar 2024	0.01	0.01	0.60	-	1.06																										
	16 Oct 2024	0.01	0.01	0.47	-	0.88	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.03	0.01	1.10		2.16																										
	65th%ile	0.02	0.01	0.87		1.34																										
MW123S	18 Sep 2018	1.90	0.59	11.80		-																										
	10 Jul 2019	3.00	0.52	30.00		-																										
	04 Dec 2019	1.40	0.49	13.40		-																										
	29 Oct 2020	2.64	0.51	12.60	12.60	17.40																										
	31 Mar 2021	2.68	0.88	20.20	20.18	27.80																										
	18 Aug 2021	3.24	0.52	11.20	11.22	16.00																										
	03 Mar 2022	6.97	0.63	16.40	-	21.00																										
	25 Aug 2022	4.21	0.52	14.40	-	18.80																										
	08 Mar 2023	6.25	0.37	12.90	-	16.50																										
	24 Aug 2023	5.08	0.44	12.00	-	15.80																										
	08 Mar 2024	0.83	0.09	2.65	-	3.80																										
	16 Oct 2024	3.80	0.31	9.42	-	13.90	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	5.67	0.61	18.30		20.89																										
	65th%ile	3.73	0.52	13.90		18.17																										
Monocell																																
MW014A	21 Apr 2020	10.60	0.99	25.40	25.40	36.60																										
	02 Mar 2021	21.90	1.44	37.10	37.10	50.90																										
	22 Feb 2022	9.91	0.66	16.90	-	23.70																										
	27 May 2022	12.00	0.86	22.20	22.20	31.10																										
	12 Jul 2022	14.80	1.02	26.00	26.00	35.40																										

Table 10
Groundwater Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																									Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines **(Sum PFHxS and PFOS)** Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																										Risk Characterisation	Immediate Response Actions
EQL		0.01	0.01	0.01		0.01																											
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																												
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																														
Location Code	Date																																
	16 Oct 2024	0.26	0.01	0.61	-	0.82	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	17.64	1.19	30.44		42.32																											
	65th%ile	13.68	1.01	25.76		36.12																											
MW072	22 Jun 2016	0.55	6.60	-	-	-																											
	22 Sep 2017	25.80	10.00	352.00	-	524.00																											
	18 Oct 2018	20.00	3.10	94.00		-																											
	03 Dec 2019	42.00	1.20	66.00		-																											
	17 Apr 2020	100.00	5.56	180.00	180.30	249.00																											
	28 Oct 2020	80.70	2.94	120.00	119.70	152.00																											
	02 Mar 2021	170.00	3.94	221.00	220.60	266.00																											
	31 Mar 2021	150.00	4.37	211.00	211.40	258.00																											
	20 Aug 2021	82.80	2.63	128.00	127.70	164.00																											
	22 Feb 2022	126.00	2.92	168.00	-	204.00																											
	03 Mar 2022	96.00	2.78	133.00	-	165.00																											
	25 Aug 2022	60.30	2.03	97.50	-	126.00																											
	09 Mar 2023	76.30	2.30	116.00	-	152.00																											
	25 Aug 2023	50.00	2.07	89.30	-	119.00																											
	07 Mar 2024	42.00	1.52	74.10	-	96.50																											
	16 Oct 2024	29.60	1.37	56.40	-	79.20	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	127.20	4.43	211.50		260.80																											
	65th%ile	88.74	3.01	148.75		210.75																											
MW074	22 Jun 2016	0.12	2.50	-	-	-																											
	14 Sep 2017	51.20	3.62	121.00	-	168.00																											
	13 Oct 2018	32.00	2.70	72.00		-																											
	12 Jul 2019	53.00	2.70	106.00		-																											
	03 Dec 2019	45.00	2.50	90.00		-																											
	19 Apr 2020	57.60	2.78	107.00	106.80	143.00																											
	28 Oct 2020	47.90	2.68	89.00	89.00	121.00																											
	02 Mar 2021	33.00	1.98	64.60	64.60	89.30																											
	31 Mar 2021	41.80	2.07	75.20	75.20	98.80																											
	19 Aug 2021	54.20	3.37	107.00	107.10	148.00																											
	22 Feb 2022	39.80	2.61	80.50	-	112.00																											
	03 Mar 2022	45.60	2.78	83.20	-	111.00																											
	25 Aug 2022	55.00	2.34	96.50	-	129.00																											
	07 Mar 2023	71.70	2.83	116.00	-	155.00																											
	09 Mar 2023	51.00	2.85	92.40	-	126.00																											
	25 Aug 2023	59.50	3.18	111.00	-	149.00																											
	07 Mar 2024	38.30	1.94	72.80	-	95.60																											
	16 Oct 2024	47.50	2.57	85.30	-	118.00	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	56.56	3.05	110.00		150.20																											
	65th%ile	51.92	2.78	103.63		140.20																											
MW077	07 Mar 2023	0.58	0.02	1.04	-	1.34																											
	16 Oct 2024	0.66	0.03	0.97	-	1.22	Yes	No	No	No	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Negligible potential for risk profile change	Continue monitoring
MW106	31 Aug 2018	0.09	0.01	0.21		-																											
		0.09	0.01	0.23		-																											
	12 Jul 2019	0.04	0.01	0.14		-																											
	03 Dec 2019	0.08	0.01	0.28		-																											
	28 Oct 2020	0.09	0.01	0.21	0.21	0.28																											
	31 Mar 2021	0.05	0.01	0.12	0.12	0.20																											
	18 Aug 2021	0.10	0.01	0.35	0.35	0.48																											
	03 Mar 2022	0.05	0.01	0.17	-	0.23																											

Table 10
Groundwater Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																									Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																										Risk Characterisation	Immediate Response Actions
EQL		0.01	0.01	0.01		0.01																											
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																												
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																														
Location Code	Date																																
[illegible]	25 Aug 2022	0.09	0.01	0.25	-	0.37																											
	09 Mar 2023	0.18	0.01	0.53	-	0.79																											
	25 Aug 2023	0.40	0.01	0.72	-	0.82																											
	07 Mar 2024	0.08	0.01	0.14	-	0.19																											
	16 Oct 2024	0.07	0.01	0.14	-	0.19	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.13	0.01	0.41		0.77																											
	65th%ile	0.09	0.01	0.25		0.43																											
MW349	08 Jun 2022	41.30	1.50	63.20	63.20	79.80																											
	12 Jul 2022	33.20	1.52	54.90	54.90	70.70																											
	16 Oct 2024	24.20	1.60	48.60	-	70.00	Yes	Yes	No	Yes	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Negligible potential for risk profile change	Continue monitoring
	85th%ile	40.09	1.52	61.96		78.44																											
	65th%ile	38.47	1.51	60.30		76.62																											
Stockpile Designated Area 2																																	
MW141	15 Oct 2018	0.76	0.07	3.46		-																											
	16 Oct 2018	0.87	0.10	3.97		-																											
	12 Jul 2019	0.72	0.08	3.02		-																											
	03 Dec 2019	0.58	0.05	2.18		-																											
	28 Oct 2020	0.64	0.07	2.32	2.32	3.58																											
	31 Mar 2021	0.77	0.07	2.38	2.38	3.56																											
	17 Aug 2021	0.37	0.04	1.15	1.15	1.73																											
	03 Mar 2022	0.51	0.05	1.57	-	2.33																											
	24 Aug 2022	0.52	0.04	1.64	-	2.37																											
	09 Mar 2023	0.44	0.04	1.40	-	2.07																											
	25 Aug 2023	0.42	0.03	1.26	-	1.76																											
	07 Mar 2024	0.28	0.02	0.80	-	1.09																											
	16 Oct 2024	0.27	0.03	0.71	-	1.11	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.76	0.07	2.96		3.50																											
	65th%ile	0.65	0.07	2.33		2.35																											
Suspected Aqueous Film Forming Foam (AFFF) Disposal Area																																	
MW101	20 Sep 2018	0.64	0.02	0.84		-																											
		0.57	0.01	0.80		-																											
	10 Jul 2019	0.53	0.01	0.81		-																											
	03 Dec 2019	0.62	0.02	0.98		-																											
	29 Oct 2020	1.27	0.04	2.07	2.07	2.63																											
	31 Mar 2021	0.34	0.02	0.68	0.68	1.17																											
	18 Aug 2021	0.67	0.03	1.27	1.27	1.78																											
	03 Mar 2022	0.37	0.02	0.79	-	1.41																											
	24 Aug 2022	0.37	0.01	0.90	-	1.55																											
	09 Mar 2023	0.20	0.01	0.35	-	0.56																											
	24 Aug 2023	0.69	0.02	1.04	-	1.34																											
	07 Mar 2024	0.03	0.01	0.04	-	0.06																											
	85th%ile	0.68	0.03	1.16		1.87																											
	65th%ile	0.63	0.02	0.94		1.54																											
Top, Middle and Lower Dams																																	
MW138	10 Oct 2018	4.60	0.29	10.10		-																											
		4.50	0.34	10.30		-																											
	29 Oct 2020	7.60	0.29	13.80	13.79	18.60																											
	31 Mar 2021	8.81	0.37	15.00	14.96	19.70																											
	18 Aug 2021	6.91	0.40	12.90	12.92	17.80																											
	03 Mar 2022	7.09	0.34	12.30	-	16.40																											
	24 Aug 2022	6.04	0.32	11.10	-	15.20																											
	09 Mar 2023	8.75	0.43	15.50	-	21.50																											

Table 10
Groundwater Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.01	0.01	0.01		0.01																											Risk Characterisation	Immediate Response Actions
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																													
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																													
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																															
Location Code	Date																																	
	24 Aug 2023	8.33	0.43	14.40	-	19.20																												
	07 Mar 2024	7.51	0.36	12.90	-	17.20																												
	16 Oct 2024	6.18	0.47	11.50	-	17.80	Yes	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No	No	No	No	No	No	No	NR	TBV	NR	NR	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	8.60	0.42	14.79		19.68																												
	65th%ile	7.59	0.37	13.67		18.93																												
Base Boundary - On-Base																																		
MW002	13 Sep 2017	0.92	0.04	2.30	-	2.82																												
	16 Oct 2018	0.92	0.04	2.22		-																												
		0.94	0.04	2.34		-																												
	10 Jul 2019	2.30	0.02	3.07		-																												
	05 Dec 2019	0.81	0.01	2.31		-																												
	19 Apr 2020	2.04	0.04	3.18	3.18	3.65																												
	28 Oct 2020	0.79	0.02	1.23	1.23	1.41																												
	02 Mar 2021	2.88	0.06	4.20	4.20	4.79																												
	31 Mar 2021	2.72	0.06	4.91	4.91	5.61																												
	19 Aug 2021	1.28	0.02	2.53	2.53	2.88																												
	21 Feb 2022	1.26	0.03	2.08	-	2.43																												
	03 Mar 2022	1.46	0.03	2.20	-	2.46																												
	25 Aug 2022	0.82	0.01	1.35	-	1.52																												
	08 Mar 2023	3.16	0.06	5.09	-	5.89																												
	24 Aug 2023	0.78	0.01	1.39	-	1.57																												
	08 Mar 2024	1.87	0.03	2.76	-	3.10																												
	16 Oct 2024	0.91	0.01	2.17	-	2.49	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	2.62	0.06	3.95		5.08																												
	65th%ile	1.77	0.04	2.70		3.18																												
MW003	04 Oct 2017	0.04	0.01	0.04	-	0.04																												
	08 Oct 2018	0.02	0.01	0.00		-																												
	16 Oct 2018	0.02	0.01	0.00		-																												
		0.02	0.01	0.00		-																												
	12 Jul 2019	0.02	0.01	0.00		-																												
	23 Apr 2020	0.87	0.02	1.27	1.27	2.08																												
	29 Oct 2020	0.06	0.01	0.09	0.09	0.09																												
	02 Mar 2021	0.02	0.01	0.02	0.02	0.02																												
	31 Mar 2021	0.04	0.01	0.04	0.04	0.04																												
	18 Aug 2021	0.01	0.01	0.01	0.00	0.01																												
	22 Feb 2022	0.01	0.01	0.01	-	0.01																												
	03 Mar 2022	0.01	0.01	0.01	-	0.01																												
	24 Aug 2022	0.01	0.01	0.01	-	0.01																												
	08 Mar 2023	0.01	0.01	0.01	-	0.01																												
	24 Aug 2023	0.01	0.01	0.01	-	0.18																												
	08 Mar 2024	0.01	0.01	0.01	-	0.01																												
	16 Oct 2024	0.01	0.01	0.01	-	0.01	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Consider value of retaining this monitoring well
	85th%ile	0.04	0.01	0.04		0.12																												
	65th%ile	0.02	0.01	0.01		0.04																												
MW118	03 Sep 2018	0.02	0.01	0.05		-																												
	11 Jul 2019	0.02	0.01	0.04		-																												
	28 Oct 2020	0.01	0.01	0.05	0.05	0.09																												
	30 Mar 2021	0.02	0.01	0.04	0.04	0.09																												
	17 Aug 2021	0.01	0.01	0.04	0.04	0.10																												
	18 Feb 2022	0.01	0.01	0.03	-	0.07																												
	24 Aug 2022	0.01	0.01	0.03	-	0.08																												
	09 Mar 2023	0.01	0.01	0.04	-	0.12																												
	25 Aug 2023	0.07	0.01	0.11	-	0.37																												

Table 10
Groundwater Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																								Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																											
EQL		0.01	0.01	0.01		0.01																											
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																											
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																											
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																												Risk Characterisation	Immediate Response Actions
Location Code	Date																															
	07 Mar 2024	0.01	0.01	0.02	-	0.07																											
	16 Oct 2024	0.01	0.01	0.03	-	0.10	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.02	0.01	0.05		0.12																											
	65th%ile	0.02	0.01	0.04		0.10																											
MW119	03 Sep 2018	0.78	0.01	0.80		-																											
	11 Jul 2019	0.02	0.03	0.03		-																											
	05 Dec 2019	0.02	0.04	0.04		-																											
	28 Oct 2020	0.01	0.05	0.04	0.04	0.75																											
	30 Mar 2021	0.01	0.06	0.03	0.03	0.63																											
	17 Aug 2021	0.01	0.10	0.05	0.05	1.08																											
	18 Feb 2022	0.02	0.11	0.06	-	1.19																											
	24 Aug 2022	0.02	0.11	0.07	-	0.91																											
	07 Mar 2023	0.04	0.13	0.10	-	1.13																											
	25 Aug 2023	0.05	0.15	0.11	-	1.20																											
	08 Mar 2024	0.04	0.14	0.09	-	1.00																											
	16 Oct 2024	0.04	0.14	0.09	-	1.30	Yes	No	No	No	No	No	No	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	NR	TBV	NR	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring. Note that increasing PFAS concentrations are relatively low so risk response downgraded from high to elevated
	85th%ile	0.05	0.14	0.11		1.19																											
	65th%ile	0.03	0.11	0.08		1.11																											
MW124	12 Jul 2019	0.02	0.01	0.00		-																											
	02 Nov 2020	0.01	0.01	0.01	0.01	0.18																											
	31 Mar 2021																																
	17 Aug 2021	0.01	0.01	0.01	0.00	0.01																											
	02 Mar 2022	0.02	0.02	0.02	0.02	0.02																											
	24 Aug 2022	0.01	0.01	0.01	-	0.01																											
	08 Mar 2023	0.01	0.01	0.01	-	0.01																											
	24 Aug 2023	0.01	0.01	0.01	-	0.01																											
	08 Mar 2024	0.01	0.01	0.01	-	0.01																											
	16 Oct 2024	0.02	0.01	0.02	-	0.02	Yes	No	No	No	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	Yes	Yes	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.02	0.01	0.01		0.04																											
	65th%ile	0.01	0.01	0.01		0.01																											
MW125I	26 Sep 2018	0.02	0.01	0.13		-																											
	11 Jul 2019	0.03	0.01	0.21		-																											
	02 Nov 2020	0.04	0.01	0.21	0.21	0.42																											
	31 Mar 2021	0.05	0.01	0.23	0.23	0.32																											
	17 Aug 2021	0.03	0.01	0.22	0.22	0.34																											
	02 Mar 2022	0.03	0.01	0.21	-	0.32																											
	24 Aug 2022	0.03	0.01	0.18	-	0.24																											
	08 Mar 2023	0.02	0.01	0.15	-	0.23																											
	24 Aug 2023	0.02	0.01	0.17	-	0.24																											
	08 Mar 2024	0.02	0.01	0.43	-	0.67																											
	16 Oct 2024	0.01	0.02	1.07	-	2.12	Yes	No	No	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	NR	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	0.04	0.01	0.23		0.42																											
	65th%ile	0.03	0.01	0.21		0.33																											
	18 Sep 2018	0.02	0.01	0.30		-																											
	11 Jul 2019	0.02	0.01	0.21		-																											
	02 Nov 2020	0.02	0.01	0.26	0.26	0.75																											

Table 10
Groundwater Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																								Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (**Sum PFHxS and PFOS**) Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																											
EQL		0.01	0.01	0.01		0.01																											
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																											
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																											
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																												Risk Characterisation	Immediate Response Actions
Location Code	Date																															
MW125S	31 Mar 2021	0.01	0.01	0.21	0.21	0.29																										
	17 Aug 2021	0.01	0.01	0.96	0.96	1.97																										
	02 Mar 2022	0.01	0.02	1.37	-	3.19																										
	24 Aug 2022	0.02	0.01	0.70	-	1.17																										
	08 Mar 2023	0.02	0.01	0.60	-	0.89																										
	24 Aug 2023	0.03	0.04	2.31	-	3.83																										
	08 Mar 2024	0.04	0.08	3.86	-	6.11																										
	16 Oct 2024	0.05	0.11	4.10	-	7.71	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring. Note that the increasing PFOS concentrations are associated with relatively low concetrations so risk response downgraded from high to elevated.
	85th%ile	0.03	0.03	1.98		3.80																										
	65th%ile	0.02	0.01	0.92		2.64																										
Off-Base																																
MW205S	12 Sep 2018	0.02	0.01	0.02		-																										
	08 Jul 2019	0.02	0.01	0.02		-																										
	03 Nov 2020	0.02	0.01	0.04	0.04	0.04																										
	31 Mar 2021	0.02	0.01	0.04	0.04	0.04																										
	19 Aug 2021	0.02	0.01	0.04	0.04	0.04																										
	03 Mar 2022	0.02	0.01	0.04	-	0.04																										
	24 Aug 2022	0.02	0.01	0.05	-	0.05																										
	08 Mar 2023	0.03	0.01	0.06	-	0.06																										
	24 Aug 2023	0.03	0.01	0.06	-	0.06																										
	07 Mar 2024	0.02	0.01	0.04	-	0.04																										
	16 Oct 2024	0.02	0.01	0.03	-	0.03	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.03	0.01	0.06	0.04	0.06																										
	65th%ile	0.02	0.01	0.04	0.04	0.05																										
MW212	11 Sep 2018	0.02	0.01	0.00		-																										
	03 Nov 2020	0.01	0.01	0.01	0.00	0.06																										
	31 Mar 2021	0.01	0.01	0.01	0.01	0.01																										
	18 Aug 2021	0.01	0.01	0.01	0.01	0.01																										
	03 Mar 2022	0.01	0.01	0.01	0.01	0.01																										
	24 Aug 2022	0.01	0.01	0.01	0.01	0.01																										
	07 Mar 2023	0.01	0.01	0.01	0.01	0.01																										
	24 Aug 2023	0.01	0.01	0.01	0.01	0.01																										
	07 Mar 2024	0.01	0.01	0.01	0.01	0.01																										
	16 Oct 2024	0.01	0.01	0.01	0.01	0.01	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.01	0.01	0.01	0.01	0.01																										
	65th%ile	0.01	0.01	0.01	0.01	0.01																										
MW217	11 Sep 2018	0.02	0.01	0.01		-																										
	09 Jul 2019	0.02	0.01	0.01		-																										
	03 Nov 2020	0.02	0.02	0.02	0.02	0.02																										
	31 Mar 2021																															
	18 Aug 2021																															
	03 Mar 2022	0.08	0.01	0.10	-	0.16																										
	22 Apr 2022	0.01	0.01	0.01	-	0.01																										
	24 Aug 2022	0.01	0.01	0.01	-	0.01																										
	08 Mar 2023	0.02	0.01	0.03	-	0.06																										
	24 Aug 2023	0.02	0.01	0.01	-	0.04																										
	07 Mar 2024	0.01	0.01	0.01	0.01	0.01																										

Table 10
Groundwater Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																								Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines **(Sum PFHxS and PFOS)** Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																									Risk Characterisation	Immediate Response Actions
EQL		0.01	0.01	0.01		0.01																										
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																											
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																											
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																													
Location Code	Date																															
	16 Oct 2024	0.01	0.01	0.02	-	0.05	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change (low PFAS)	Continue monitoring
	85th%ile	0.02	0.01	0.03	0.02	0.07																										
	65th%ile	0.02	0.01	0.02	0.02	0.04																										
MW220S	12 Sep 2018	0.02	0.01	0.00		-																										
	06 Dec 2019	0.02	0.01	0.38		-																										
	03 Nov 2020	0.04	0.01	0.68	0.68	1.32																										
	01 Apr 2021	0.05	0.01	1.09	1.09	1.63																										
	18 Aug 2021	0.02	0.01	0.52	0.52	0.82																										
	03 Mar 2022	0.01	0.01	0.48	-	0.69																										
	24 Aug 2022	0.01	0.01	0.13	-	0.19																										
	07 Mar 2023	0.02	0.01	0.70	-	1.08																										
	24 Aug 2023	0.03	0.01	0.72	-	0.98																										
	07 Mar 2024	0.02	0.01	0.30	-	0.46																										
	16 Oct 2024	0.02	0.01	0.34	-	0.55	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.04	0.01	0.71	0.97	1.31																										
	65th%ile	0.02	0.01	0.66	0.80	1.01																										
MW226	29 Nov 2017	0.27	0.02	0.80		-																										
	09 Aug 2018	0.09	0.01	0.15		-																										
	04 Dec 2019	0.08	0.01	0.13		-																										
	29 Oct 2020	0.16	0.01	0.42	0.42	0.56																										
	30 Mar 2021	0.03	0.01	0.08	0.08	0.11																										
	19 Aug 2021	0.11	0.01	0.54	0.54	0.86																										
	02 Mar 2022	0.09	0.01	0.41	-	0.69																										
	25 Aug 2022	0.04	0.01	0.30	-	0.56																										
	08 Mar 2023	0.05	0.01	0.25	-	0.41																										
	24 Aug 2023	0.07	0.01	0.72	-	1.09																										
	08 Mar 2024	0.01	0.01	0.07	-	0.13																										
	16 Oct 2024	0.02	0.01	0.14	-	0.33	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.14	0.01	0.63		0.85																										
	65th%ile	0.09	0.01	0.42		0.63																										
MW232	12 Sep 2018	0.09	0.01	0.16		-																										
	09 Jul 2019	0.10	0.01	0.21		-																										
	06 Dec 2019	0.10	0.01	0.19		-																										
	03 Nov 2020	0.17		0.27	0.27	0.40																										
	31 Mar 2021	0.10	0.01	0.19	0.19	0.34																										
	20 Aug 2021	0.06		0.15	0.15	0.20																										
	03 Mar 2022	0.10	0.01	0.19	-	0.36																										
	24 Aug 2022	0.07	0.01	0.16	-	0.30																										
	09 Mar 2023	0.13	0.01	0.25	-	0.42																										
	24 Aug 2023	0.17	0.01	0.27	-	0.34																										
	07 Mar 2024	0.10	0.01	0.16	-	0.26																										
	16 Oct 2024	0.11	0.01	0.18	-	0.24	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.15	0.01	0.26		0.40																										
	65th%ile	0.10	0.01	0.20		0.35																										
	11 Sep 2018	0.02	0.01	0.01		-																										
	11 Jul 2019	0.02	0.01	0.01		-																										
	06 Dec 2019	0.02	0.01	0.01		-																										
	03 Nov 2020	0.01	0.01	0.01	0.00	0.15																										
	31 Mar 2021	0.01	0.01	0.01	0.00	0.01																										
	18 Aug 2021	0.01	0.01	0.01	0.00	0.01																										
	03 Mar 2022	0.01	0.01	0.01	-	0.01																										

Table 10
Groundwater Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																									Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA) Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines **(Sum PFHxS and PFOS)** Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile? Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																										Risk Characterisation	Immediate Response Actions
EQL		0.01	0.01	0.01		0.01																											
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																												
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																														
Location Code	Date																																
MW233	24 Aug 2022	0.01	0.01	0.01	-	0.01																											
	07 Mar 2023	0.02	0.01	0.02	-	0.02																											
	24 Aug 2023	0.08	0.01	0.12	-	0.12																											
	07 Mar 2024	0.01	0.01	0.01	0.01	0.01																											
	16 Oct 2024	0.01	0.01	0.01	0.01	0.01	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.02	0.01	0.02		0.12																											
	65th%ile	0.02	0.01	0.01		0.02																											
MW235S	10 Sep 2018	0.02	0.01	0.02		-																											
	08 Jul 2019	0.02	0.01	0.01		-																											
	03 Nov 2020	0.02	0.01	0.02	0.02	0.05																											
	31 Mar 2021	0.01	0.01	0.01	0.00	0.02																											
	18 Aug 2021	0.12	0.02	0.15	0.15	0.18																											
	03 Mar 2022	0.02	0.02	0.02	0.02	0.02																											
	25 Aug 2022	0.01	0.01	0.01	-	0.04																											
	08 Mar 2023																																
	24 Aug 2023	0.01	0.01	0.01	-	0.04																											
	07 Mar 2024	0.01	0.01	0.01	-	0.02																											
	85th%ile	0.02	0.02	0.02		0.08																											
	65th%ile	0.02	0.01	0.02		0.04																											
MW236S	11 Sep 2018	0.33	0.02	0.65		-																											
	08 Jul 2019	0.14	0.01	0.25		-																											
	05 Dec 2019	0.18	0.01	0.35		-																											
	03 Nov 2020	0.16	0.01	0.37	0.37	0.49																											
	31 Mar 2021	0.09	0.01	0.17	0.17	0.20																											
	19 Aug 2021	0.15		0.31	0.31	0.36																											
	04 Mar 2022	0.25	0.01	0.49	-	0.58																											
	24 Aug 2022	0.19	0.01	0.27	-	0.32																											
	08 Mar 2023	0.17	0.01	0.28	-	0.36																											
	24 Aug 2023	0.09	0.01	0.14	-	0.18																											
	07 Mar 2024	0.12	0.01	0.24	-	0.32																											
	16 Oct 2024	0.20	0.01	0.35	-	0.43	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	Yes	No	Yes	Yes	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	0.22	0.01	0.43		0.48																											
	65th%ile	0.18	0.01	0.33		0.36																											

Notes:
TBV - to be verified. Data validation and site-specific conditions have been considered - further verification will be via continuation of the OMP
NR - not required. No further action is required at the moment.
Conditional formatting of PFAS concentrations for visual trend analysis limited to the wet season. Conditional formatting not used when PFAS measured below LOR.
Data measured below detection (<LOR) reported as a concentration equal to the LOR (and shaded in grey).
* = Drinking water guidelines apply only to Off-Base groundwater results.
** = Recreation guidelines apply to On-Base and Off-Base groundwater results.
*** = Ecological guidelines do not apply to On-Base or Off Base groundwater results.

Table 11
Surface Water Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																								Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.002	0.001	0.01		0.01																												
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																												
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																														
Location Code	Date																														Risk Characterisation	Immediate Response Actions
Eastern PFAS Contamination Area																																	
SW119	16 Dec 2018	0.88	0.04	1.24		-																											
	29 Oct 2020	0.77	0.07	2.43	2.43	4.05																											
	29 Mar 2021	0.42	0.02	0.75	0.75	1.06																											
	18 Aug 2021	0.41	0.04	1.49	1.49	2.52																											
	01 Mar 2022	0.28	0.03	0.94	-	1.45																											
	10 Mar 2023	0.68	0.06	1.48	-	2.44																											
	22 Aug 2023	0.46	0.04	1.01	-	1.47																											
	04 Mar 2024	0.42	0.03	0.83	-	1.25																											
	09 Oct 2024	0.64	0.06	1.55	-	2.44	Yes	No	No	No	No			No		No	No	No	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No	NR	TBV	TBV	NR	Elevated potential for risk profile change	Verify high PFAS results and continue monitoring
	85th%ile	0.77	0.06	1.49		2.67																											
	65th%ile	0.58	0.04	1.37		2.34																											
SW121	10 Dec 2018	0.24	0.010	0.47		-																											
		0.22	0.02	0.44		-																											
	16 Dec 2018	0.77	0.038	1.27		-																											
	11 Jul 2019	0.065	0.010	0.155		-		0.77																									
	03 Feb 2020	0.6	0.063	1.9		-																											
	29 Oct 2020	1.19	0.09	3.32	3.32	5.09																											
	29 Mar 2021	0.52	0.04	1.28	1.28	1.9																											
	16 Aug 2021	1.14	0.22	6.66	6.66	10.7																											
	01 Mar 2022	0.36	0.03	0.82	-	1.2																											
	22 Aug 2022	0.48	0.05	1.45	-	2.3																											
	04 Mar 2024	0.36	0.02	0.7	-	0.93																											
	09 Oct 2024	2.84	0.32	12	-	17.8	Yes	Yes	No	Yes	Yes			Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	1.0	0.1	2.6		6.5																											
	65th%ile	0.56	0.05	1.37		3.00																											
Former Fire Station																																	
SW109	16 Dec 2018	5.2	0.4	8.3		-																											
	29 Mar 2021	72.5	5.61	128	127.9	178																											
	01 Mar 2022	89.2	11.3	192	-	298																											
	22 Aug 2022	109	6.36	165	-	216																											
	06 Mar 2023	82.2	4.82	134	-	181																											
	22 Aug 2023	47.2	3.55	78	-	112																											
	04 Mar 2024	32.4	1.47	51.8	-	66.5																											
	09 Oct 2024	161	2.54	196	-	230	Yes	Yes	No	Yes	Yes			Yes		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	Yes	No	No	No	No	TBV	NR	TBV	NR	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	91.2	6.9	167.7		236.5																											
	65th%ile	81.2	5.5	133.4		189.8																											
SW110	14 Dec 2018	13	0.51	34		-																											
	08 Jul 2019	1.6	0.048	3.8		-																											
	03 Feb 2020	0.25	0.013	0.66		-																											
	29 Mar 2021	1.28	0.06	2.75	2.75	3.58																											
	01 Mar 2022	17	1.14	30	-	48.3																											
	26 Apr 2022	0.02	0.010	0.03	-	0.03																											
	22 Aug 2022	47.7	2.54	73.1	-	95.6																											
	07 Oct 2022	32.9	1.51	50.5	-	65.8																											
	15 Mar 2023	36.9	2.67	70.2	-	98.4																											
	22 Aug 2023	23.2	1.48	38.2	-	53.3																											
	04 Mar 2024	28.3	1.24	44.5	-	56.2																											
	85th%ile	34.9	2.0	60.4		76.2																											
	65th%ile	25.8	1.4	41.4		53.7																											

Table 11
Surface Water Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																														Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																																
EQL		0.002	0.001	0.01		0.01																																
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																																
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																																
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																																		
Location Code	Date																																				
Lavarack Golf Course and Sporting Fields																																						
SW129	10 Dec 2018	0.034	<0.010	0.054		-																																
		0.036	0.02	0.056		-																																
	16 Dec 2018	0.055	<0.010	0.12		-																																
	26 Mar 2021	0.29	0.03	0.6	0.6	0.94																																
	22 Apr 2022	0.03	<0.010	0.09	-	0.09																																
	06 Mar 2023	0.2	0.04	0.51	-	1.14																																
	04 Mar 2024	0.11	0.02	0.29	-	0.55																																
	85th%ile	0.21	0.03	0.52		1.1																																
	65th%ile	0.10	0.02	0.27		0.8																																
SW130	10 Dec 2018	0.031	<0.010	0.11		-																																
		0.023	<0.010	0.106		-																																
	16 Dec 2018	0.13	<0.010	0.33		-																																
	26 Mar 2021	0.69	0.03	1.27	1.27	1.68																																
	22 Apr 2022	0.04	<0.010	0.23	-	0.36																																
	08 Mar 2023	0.08	<0.010	0.31	-	0.45																																
	04 Mar 2024	0.4	0.02	0.8	-	1.04																																
	85th%ile	0.43	0.02	0.85		1.4																																
	65th%ile	0.13	0.01	0.33		0.8																																
Top, Middle and Lower Dams																																						
SW139	02 Oct 2018	0.74	0.039	1.48		-																																
	29 Oct 2020	0.99	0.04	1.83	1.83	2.52																																
	29 Mar 2021	1.56	0.07	2.4	2.4	3.16																																
	22 Jun 2021	1.6	0.1	2.78	2.78	3.79																																
	16 Aug 2021	1.78	0.1	3.06	3.06	4.05																																
	01 Mar 2022	0.55	0.03	0.86	-	1.06																																
	22 Aug 2022	1.06	0.06	1.82	-	2.45																																
	06 Mar 2023	1.34	0.08	2.34	-	3.14																																
	22 Aug 2023	1.35	0.09	2.39	-	3.22																																
	04 Mar 2024	0.18	<0.010	0.31	-	0.37																																
	09 Oct 2024	1.73	0.09	3.02	-	4.14	Yes	Yes	No	Yes	No	No	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	1.59	0.10	2.65		3.7																																
	65th%ile	1.35	0.08	2.38		3.2																																
SW140	03 Oct 2018	0.76	0.037	1.48		-																																
	10 Jul 2019	1.5	0.078	2.5		-																																
	05 Aug 2019	1.6	0.093	2.8		-																																
	03 Feb 2020	0.31	0.011	0.47		-																																
	29 Oct 2020	1.63	0.06	2.52	2.52	3.2																																
	29 Mar 2021	0.62	0.03	1.04	1.04	1.36																																
	16 Aug 2021	1.57	0.09	2.69	2.69	3.61																																
	01 Mar 2022	0.37	0.02	0.58	-	0.72																																
	22 Aug 2022	1.09	0.06	1.88	-	2.5																																
	06 Mar 2023	0.91	0.05	1.52	-	1.98																																
	22 Aug 2023	2.66	0.09	4.25	-	5.25																																
	04 Mar 2024	0.19	<0.010	0.3	-	0.35																																
	09 Oct 2024	1.52	0.08	2.63	-	3.64	Yes	Yes	No	Yes	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	NR	NR	NR	TBV	Low potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	1.61	0.09	2.73		3.6																																
	65th%ile	1.50	0.06	2.42		2.9																																
SW144	02 Oct 2018	0.07	<0.010	0.14		-																																

Table 11
Surface Water Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																									Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.002	0.001	0.01		0.01																												
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																												
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																													Risk Characterisation	Immediate Response Actions
Location Code	Date																																
	08 Jul 2019	0.094	0.010	0.193		-																											
	05 Aug 2019	0.096	0.010	0.196		-																											
	03 Feb 2020	0.082	0.010	0.156		-																											
	13 May 2021	0.07	0.010	0.13	0.13	0.13																											
	16 Aug 2021	0.09	0.010	0.18	0.18	0.21																											
	01 Mar 2022	0.07	0.010	0.13	-	0.13																											
	22 Aug 2022	0.05	0.010	0.12	-	0.12																											
	10 Mar 2023	0.11	0.010	0.19	-	0.21																											
	22 Aug 2023	0.09	0.010	0.19	-	0.22																											
	04 Mar 2024	0.13	0.010	0.22	-	0.28																											
	09 Oct 2024	0.16	0.010	0.3	-	0.37	Yes	Yes	No	No	No				Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	TBV	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring. Note that increasing PFAS concentrations are relatively low so risk response downgraded from high to elevated
	85th%ile	0.10	0.01	0.19		0.2																											
	65th%ile	0.09	0.01	0.19		0.2																											
Remaining on-Base																																	
SW113	12 Dec 2018	0.054	0.010	0.106		-																											
	03 Feb 2020	0.065	0.010	0.165		-																											
	28 Oct 2020	0.22	0.03	0.41	0.41	1.03																											
	29 Mar 2021	0.1	0.010	0.26	0.26	0.33																											
	01 Mar 2022	0.08	0.010	0.22	-	0.26																											
	22 Aug 2022	0.05	0.010	0.2	-	0.27																											
	10 Mar 2023	0.09	0.010	0.24	-	0.3																											
	22 Aug 2023	0.07	0.010	0.23	-	0.36																											
	04 Mar 2024	0.05	0.010	0.1	-	0.1																											
	85th%ile	0.10	0.01	0.26		0.4																											
	65th%ile	0.08	0.01	0.23		0.3																											
SW120	12 Dec 2018	0.087	0.010	0.147		-																											
	29 Mar 2021	0.12	0.010	0.29	0.29	0.36																											
	22 Apr 2022	0.04	0.010	0.09	-	0.11																											
	04 Mar 2024	0.07	0.010	0.17	-	0.22																											
	85th%ile	0.11	0.01	0.24		0.3																											
	65th%ile	0.09	0.01	0.17		0.3																											
Base Boundary - On-base																																	
SW126	10 Dec 2018	0.020	0.010	-	0	-																											
		0.020	0.010	-	0	-																											
	12 Jul 2019	0.020	0.010	-	0	-																											
	26 Mar 2021	0.010	0.010	0.010	0	0.010																											
	22 Apr 2022	0.010	0.010	0.010	-	0.010																											
	08 Mar 2023	0.010	0.010	0.010	-	0.010																											
	04 Mar 2024	0.010	0.010	0.010	-	0.010																											
	85th%ile	0.02	0.01	0.01		0.01																											
	65th%ile	0.02	0.01	0.01		0.01																											
SW128	10 Dec 2018	0.020	0.010	0.010	0	-																											
		0.020	0.010	0.010	0	-																											
	16 Dec 2018	0.1	0.010	0.163		-																											
	26 Mar 2021	0.1	0.010	0.15	0.15	0.15																											
	22 Apr 2022	0.04	0.010	0.06	-	0.06																											
	06 Mar 2023	0.13	0.010	0.34	-	0.49																											

Table 11
Surface Water Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.002	0.001	0.01		0.01																												
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																												
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																														
Location Code	Date																																
	25 Aug 2023	0.03	0.010	0.05	-	0.05																												
	04 Mar 2024	0.07	0.010	0.13	-	0.16																												
	85th%ile	0.10	0.01	0.16		0.29																												
	65th%ile	0.09	0.01	0.15		0.16																												
SW132	10 Dec 2018	0.8	0.010	0.92		-																												
		0.51	0.01	0.63		-																												
	16 Dec 2018	0.47	0.016	0.75		-																												
	09 Jul 2019	1.5	0.079	3		-																												
	03 Feb 2020	0.28	0.011	0.44		-																												
	29 Oct 2020	0.74	0.03	1.12	1.12	1.39																												
	01 Apr 2021	1.39	0.08	2.55	2.55	3.5																												
	01 Mar 2022	0.58	0.03	0.99	-	1.25																												
	06 Mar 2023	1.2	0.06	2.02	-	2.63																												
	25 Aug 2023	2.96	0.14	5.48	-	7.07																												
	04 Mar 2024	0.23	0.010	0.36	-	0.42																												
	09 Oct 2024	3.06	0.21	6.31	-	9.13	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring
	85th%ile	1.45	0.08	2.78		4.4																												
	65th%ile	1.13	0.06	1.89		2.8																												
SW133	22 Apr 2022	0.04	0.010	0.08	-	0.08																												
	06 Mar 2023	0.26	0.01	0.67	-	0.87																												
	05 Mar 2024	0.010	0.010	0.010	-	0.010																												
	85th%ile	0.19	0.01	0.49		0.63																												
	65th%ile	0.11	0.01	0.26		0.32																												
SW134	29 Oct 2020	0.010	0.010	0.010	0	0.010																												
	01 Apr 2021	0.010	0.010	0.010	0	0.010																												
	18 Aug 2021	0.010	0.010	0.010	0	0.010																												
	22 Apr 2022	0.010	0.010	0.010	-	0.010																												
	08 Mar 2023	0.010	0.010	0.010	-	0.010																												
	22 Aug 2023	0.010	0.010	0.010	-	0.010																												
	04 Mar 2024	0.010	0.010	0.010	-	0.010																												
	09 Oct 2024	0.010	0.010	0.010	-	0.010	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Consider removal from OMP
	85th%ile	0.01	0.01	0.01		0.01																												
	65th%ile	0.01	0.01	0.01		0.01																												
SW135	10 Dec 2018	0.072	0.010	0.109		-																												
		0.07	0.010	0.108		-																												
	12 Dec 2018	0.1	0.010	0.21		-																												
	03 Feb 2020	0.13	0.010	0.23		-																												
	28 Oct 2020	0.52	0.010	0.68	0.68	0.76																												
	29 Mar 2021	3.62	0.07	5.64	5.64	6.49																												
	22 Jun 2021	2.44	0.03	3.46	3.46	3.86																												
	18 Aug 2021	0.19	0.010	0.28	0.28	0.3																												
	01 Mar 2022	0.25	0.010	0.4	-	0.46																												
	22 Aug 2022	0.3	0.010	0.5	-	0.58																												
	06 Mar 2023	0.32	0.06	1.13	-	1.92																												
	22 Aug 2023	0.32	0.010	0.64	-	0.78																												
	04 Mar 2024	0.09	0.010	0.21	-	0.24																												
	09 Oct 2024	0.41	0.010	0.9	-	1.09	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	Yes	Yes	No	No	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	0.90	0.04	1.60		3.47																												
	65th%ile	0.32	0.01	0.61		1.01																												

Table 11
Surface Water Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																												
EQL		0.002	0.001	0.01		0.01																												
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																												
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																												
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																													Risk Characterisation	Immediate Response Actions
Location Code	Date																																
SW136	10 Dec 2018	0.07	0.010	0.18		-																												
		0.083	0.010	0.193		-																												
	14 Dec 2018	0.1	0.010	0.22		-																												
	17 Dec 2018	0.020	0.010	0.010		-																												
	11 Jul 2019	0.69	0.034	1.01		-																												
	03 Feb 2020	0.2	0.014	0.42		-																												
	26 Mar 2021	0.36	0.01	0.52	0.52	0.62																												
	02 Mar 2022	0.25	0.010	0.35	-	0.4																												
	06 Mar 2023	0.3	0.01	0.61	-	0.78																												
	04 Mar 2024	0.28	0.010	0.42	-	0.48																												
	85th%ile	0.34	0.01	0.58		0.71																												
	65th%ile	0.28	0.01	0.42		0.61																												
Off-Base																																		
SW203	08 Dec 2017	0.13	0.012	0.228		-																												
	26 Sep 2018	0.15	0.010	0.32		-																												
	08 Jul 2019	0.9	0.035	1.55		-																												
	04 Feb 2020	0.35	0.014	0.53		-																												
	02 Nov 2020	0.17	0.01	0.36	0.36	0.48																												
	29 Mar 2021	0.42	0.02	0.73	0.73	0.93																												
	19 Aug 2021	0.36	0.02	0.73	0.73	0.92																												
	02 Mar 2022	0.3	0.01	0.53	-	0.65																												
	22 Aug 2022	0.21	0.010	0.4	-	0.51																												
	06 Mar 2023	1.05	0.04	1.8	-	2.3																												
	21 Aug 2023	0.4	0.02	0.8	-	1.06																												
	04 Mar 2024	0.2	0.01	0.34	-	0.41																												
	09 Oct 2024	1.28	0.06	2.57	-	3.46	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	TBV	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data, continue monitoring
	85th%ile	0.59	0.03	1.06		1.05																												
	65th%ile	0.37	0.02	0.73		0.93																												
SW205	08 Dec 2017	0.020	0.010	0.010		-																												
	27 Sep 2018	0.020	0.010	0.011		-																												
	09 Jul 2019	0.03	0.010	0.057		-																												
	02 Nov 2020	0.02	0.010	0.02	0.02	0.02																												
	29 Mar 2021	0.02	0.010	0.02	0.02	0.02																												
	19 Aug 2021	0.020	0.010	0.010	0	0.010																												
	02 Mar 2022	0.01	0.010	0.02	-	0.02																												
	22 Aug 2022	0.02	0.010	0.05	-	0.05																												
	09 Mar 2023	0.09	0.010	0.09	-	0.09																												
	21 Aug 2023	0.02	0.010	0.02	-	0.02																												
	09 Oct 2024	0.03	0.010	0.05	-	0.05	Yes	No	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes	No	Yes	Yes	No	No	No	No	TBV	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	0.03	0.01	0.05		0.05																												
	65th%ile	0.02	0.01	0.02		0.02																												
SW211	30 Nov 2017	0.047	0.010	0.08		-																												
	17 Dec 2018	0.035	0.010	0.072		-																												
	09 Jul 2019	0.034	0.01	0.053		-																												
	01 Apr 2021	0.03	0.010	0.03	0.03	0.05																												
	19 Aug 2021	0.010	0.010	0.010	0	0.010																												
	03 Mar 2022	0.03	0.010	0.05	-	0.08																												
	25 Aug 2022	0.02	0.010	0.02	-	0.02																												
	09 Mar 2023	0.04	0.010	0.09	-	0.11																												
	22 Aug 2023	0.02	0.010	0.04	-	0.06																												

Table 11
Surface Water Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																													
EQL		0.002	0.001	0.01		0.01																													
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																													
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																													
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																															
Location Code	Date																																Risk Characterisation	Immediate Response Actions
	07 Mar 2024	0.03	0.010	0.09	-	0.11																												
	09 Oct 2024	0.03	0.010	0.040	-	0.040	Yes	No		No		No		No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.04	0.01	0.09		0.11																												
	65th%ile	0.03	0.01	0.07		0.08																												
SW212	30 Nov 2017	0.06	0.010	0.123		-																												
	17 Dec 2018	0.1	0.010	0.28		-																												
	09 Jul 2019	0.044	0.010	0.124		-																												
	01 Apr 2021	0.02	0.010	0.08	0.08	0.11																												
	19 Aug 2021	0.07	0.02	0.11	0.11	0.21																												
	03 Mar 2022	0.02	0.010	0.04	-	0.08																												
	25 Aug 2022	0.01	0.010	0.05	-	0.09																												
	09 Mar 2023	0.1	0.01	0.28	-	0.48																												
	22 Aug 2023	0.03	0.010	0.06	-	0.06																												
	07 Mar 2024	0.03	0.010	0.07	-	0.07																												
	09 Oct 2024	0.03	0.010	0.05	-	0.09	Yes	No		No		No		No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.09	0.01	0.23		0.36																												
	65th%ile	0.06	0.01	0.12		0.11																												
SW217	17 Dec 2018	0.020	0.011	0.011		-																												
	02 Nov 2020	0.010	0.010	0.010	0.010	0.010																												
	29 Mar 2021	0.02	0.010	0.05	0.05	0.05																												
	19 Aug 2021	0.010	0.010	0.010	0.010	0.010																												
	02 Mar 2022	0.01	0.010	0.01	-	0.01																												
	22 Aug 2022	0.02	0.010	0.04	-	0.04																												
	06 Mar 2023	0.02	0.010	0.06	-	0.09																												
	21 Aug 2023	0.010	0.010	0.010	0.010	0.010																												
	04 Mar 2024	0.01	0.010	0.01	-	0.01																												
	09 Oct 2024	0.01	0.010	0.01	-	0.01	Yes	No		No		No		No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.02	0.01	0.05		0.05																												
	65th%ile	0.02	0.01	0.02		0.03																												
SW220	30 Nov 2017	0.45	0.032	0.96		-																												
	19 Sep 2018	0.21	0.010	0.49		-																												
	08 Jul 2019	0.29	0.014	0.76		-																												
	04 Feb 2020	0.29	0.014	0.71		-																												
	02 Nov 2020	0.45	0.02	0.82	0.82	1.03																												
	01 Apr 2021	0.52	0.02	1.25	1.25	1.67																												
	16 Aug 2021	0.54	0.04	1.77	1.77	2.46																												
	02 Mar 2022	0.91	0.04	1.96	-	2.53																												
	22 Aug 2022	0.74	0.04	2.08	-	2.8																												
	09 Mar 2023	0.27	0.010	0.63	-	0.8																												
	21 Aug 2023	0.97	0.06	2.74	-	3.81																												
	04 Mar 2024	0.18	0.010	0.37	-	0.44																												
	08 Oct 2024	0.48	0.03	1.44	-	2.06	Yes	Yes		No		No		No		No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	0.80	0.04	2.00		2.79																												
	65th%ile	0.52	0.03	1.33		2.50																												
SW227	24 Jan 2018	0.020	0.010	0.010		-																												
		0.020	0.010	0.010		-																												
	02 Aug 2018	0.002	0.001	0.0014		-																												
		0.002	0.001	0.0012		-																												

Table 11
Surface Water Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																											Risk Characterisation	Immediate Response Actions
EQL		0.002	0.001	0.01		0.01																												
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																													
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																													
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																															
Location Code	Date																																	
		0.002	0.001	0.0012		-																												
	07 Aug 2019	0.020	0.010	0.010		-																												
	03 Nov 2020	0.010	0.010	0.010	0	0.010																												
	26 Mar 2021	0.010	0.010	0.010	0	0.010																												
	18 Aug 2021	0.010	0.010	0.010	0	0.010																												
	28 Feb 2022	0.010	0.010	0.010	-	0.010																												
	22 Aug 2022	0.010	0.010	0.010	-	0.010																												
	08 Mar 2023	0.010	0.010	0.010	-	0.010																												
	22 Aug 2023	0.010	0.010	0.010	-	0.010																												
	07 Mar 2024	0.010	0.010	0.010	-	0.010																												
	15 Oct 2024	0.010	0.010	0.010	-	0.010	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Reference Location - No linkage to Base	Continue monitoring
	85th%ile	0.02	0.01	0.01		0.01																												
	65th%ile	0.01	0.01	0.01		0.01																												
SW232	19 Sep 2018	0.020	0.010	0.018		-																												
	02 Nov 2020	0.09	0.010	0.09	0.09	0.09																												
	29 Mar 2021	0.05	0.010	0.1	0.1	0.13																												
	16 Aug 2021	0.01	0.010	0.01	0.01	0.01																												
	02 Mar 2022	0.04	0.010	0.09	-	0.09																												
	22 Aug 2022	0.03	0.010	0.07	-	0.09																												
	09 Mar 2023	0.08	0.010	0.19	-	0.25																												
	21 Aug 2023	0.04	0.010	0.09	-	0.11																												
	04 Mar 2024	0.05	0.010	0.1	-	0.1																												
	08 Oct 2024	0.03	0.010	0.04	-	0.04	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Negligible potential for risk profile change	Continue monitoring
	85th%ile	0.07	0.01	0.10		0.13																												
	65th%ile	0.05	0.01	0.09		0.11																												
SW233	19 Sep 2018	0.26	0.010	0.5		-																												
	09 Jul 2019	0.58	0.029	1.08		-																												
	04 Feb 2020	0.39	0.016	0.58		-																												
	02 Nov 2020	0.24	0.01	0.42	0.42	0.52																												
	29 Mar 2021	0.69	0.03	1.13	1.13	1.47																												
	16 Aug 2021	0.61	0.05	1.18	1.18	1.65																												
	02 Mar 2022	0.47	0.02	0.74	-	0.9																												
	22 Aug 2022	0.68	0.05	1.36	-	1.88																												
	06 Mar 2023	1.12	0.06	1.93	-	2.53																												
	21 Aug 2023	0.54	0.05	1.07	-	1.53																												
	04 Mar 2024	0.33	0.01	0.56	-	0.69																												
	08 Oct 2024	0.92	0.05	1.69	-	2.27	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	TBV	NR	TBV	TBV	Elevated potential for risk profile change	Verify elevated PFAS data and continue monitoring in wet season
	85th%ile	0.69	0.05	1.27		1.66																												
	65th%ile	0.60	0.04	1.11		1.60																												
SW242	24 Aug 2018	0.011	0.001	0.023		-																												
		0.0095	0.001	0.0215		-																												
	09 Jul 2019	0.037	0.010	0.098		-																												
	02 Nov 2020	0.06	0.010	0.06	0.06	0.06																												
	29 Mar 2021	0.06	0.010	0.13	0.13	0.16																												
	16 Aug 2021	0.02	0.010	0.04	0.04	0.04																												
	02 Mar 2022	0.08	0.010	0.13	-	0.13																												
	22 Aug 2022	0.06	0.010	0.12	-	0.12																												
	09 Mar 2023	0.25	0.010	0.41	-	0.49																												
	21 Aug 2023	0.34	0.010	0.4	-	0.42																												

Table 11
Surface Water Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)		Regulated PFAS Compounds					Trigger Screening Framework																										Risk Characterisation	Immediate Response Actions
		Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (Sum PFHxS and PFOS)	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
		ug/L	ug/L	ug/L	ug/L	ug/L																													
EQL		0.002	0.001	0.01		0.01																													
PFAS NEMP 2.0 2020 Drinking Water*		0.07	0.56	0.07	0.07																													
PFAS NEMP 2.0 2020 Recreational Water**		2	10	2	2																													
PFAS NEMP 2.0 2020 95% Eco Marine Water***		0.13	220																															
Location Code	Date																																Risk Characterisation	Immediate Response Actions
	04 Mar 2024	0.12	0.010	0.17	-	0.19																													
	08 Oct 2024	0.09	0.010	0.11	-	0.11	Yes	No		No		No		No		No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	NR	NR	NR	NR	Low potential for risk profile change	Continue monitoring
	85th%ile	0.19	0.01	0.29		0.20																													
	65th%ile	0.07	0.01	0.13		0.18																													
SW243	24 Aug 2018	0.0025	0.001	0.0062		-																													
		0.0027	0.001	0.0065		-																													
	09 Jul 2019	0.020	0.010	0.010		-																													
	04 Feb 2020	0.020	0.010	0.010		-																													
	02 Nov 2020	0.01	0.010	0.01	0.01	0.01																													
	29 Mar 2021	0.02	0.010	0.02	0.02	0.02																													
	16 Aug 2021	0.010	0.010	0.010	0.010	0.010																													
	02 Mar 2022	0.010	0.010	0.010	0.010	0.010																													
	22 Aug 2022	0.02	0.010	0.03	-	0.03																													
	09 Mar 2023	0.04	0.010	0.06	-	0.06																													
	21 Aug 2023	0.010	0.010	0.010	0.010	0.010																													
	04 Mar 2024	0.02	0.010	0.04	-	0.04																													
	08 Oct 2024	0.010	0.010	0.010	0.010	0.010	No	No		No		No		No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Reference Location - No linkage to Base	Continue Monitoring
	85th%ile	0.02	0.01	0.03		0.04																													
	65th%ile	0.02	0.01	0.01		0.03																													
SW244	02 Aug 2018	0.002	0.001	0.0016		-																													
		0.002	0.001	0.0012		-																													
		0.002	0.001	0.0012		-																													
	03 Nov 2020	0.010	0.010	0.010	0.010	0.010																													
	26 Mar 2021	0.010	0.010	0.010	0.010	0.010																													
	18 Aug 2021	0.010	0.010	0.010	0.010	0.010																													
	28 Feb 2022	0.010	0.010	0.010	0.010	0.010																													
	22 Aug 2022	0.010	0.010	0.010	0.010	0.010																													
	08 Mar 2023	0.010	0.010	0.010	0.010	0.010																													
	22 Aug 2023	0.010	0.010	0.010	0.010	0.010																													
	07 Mar 2024	0.010	0.010	0.010	0.010	0.010																													
	15 Oct 2024	0.010	0.010	0.010	0.010	0.010	No	No		No		No		No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	NR	NR	NR	NR	Reference Location - No linkage to Base	Consider removal from OMP
	85th%ile	0.01	0.01	0.01		0.01																													
	65th%ile	0.01	0.01	0.01		0.01																													
SW245	03 Aug 2018	0.002	0.001	0.001		-																													
		0.002	0.001	0.001		-																													
		0.002	0.001	0.001		-																													
	04 Feb 2020	0.020	0.010	0.010		-																													
	03 Nov 2020	0.010	0.010	0.010	0.010	0.010																													
	26 Mar 2021	0.010	0.010	0.010	0.010	0.010																													
	18 Aug 2021	0.010	0.010	0.010	0.010	0.010																													
	28 Feb 2022	0.010	0.010	0.010	0.010	0.010																													
	22 Aug 2022	0.010	0.010	0.010	0.010	0.010																													
	08 Mar 2023	0.010	0.010	0.010	0.010	0.010																													
	22 Aug 2023	0.010	0.010	0.010	0.010	0.010																													
	07 Mar 2024	0.010	0.010	0.010	0.010	0.010																													
	15 Oct 2024	0.02	0.010	0.02	-	0.02	Yes	No		No		No		No		Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	NR	NR	NR	NR	Reference Location - No linkage to Base	Continue monitoring
	85th%ile	0.01	0.01	0.01		0.01																													
	65th%ile	0.01	0.01	0.01		0.01																													

Notes:

Table 11
Surface Water Trigger Screening
Lavarack Barracks

Reference Information (EQL/Guidelines)	Regulated PFAS Compounds					Trigger Screening Framework																											Risk Characterisation	Immediate Response Actions
	Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic Acid (PFOA)	Sum of PFHxS and PFOS (lab reported)	Sum of PFHxS and PFOS (calculated)	Sum of PFAS	Is PFAS Detectable	Is PFAS Above Relevant Guidelines (PFOS)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines (PFOA)	Dependent on Applicable Sensitive Receptor	Is PFAS Above Relevant Guidelines **(Sum PFHxS and PFOS)**	Dependent on Applicable Sensitive Receptor	Do PFAS concentrations suggest an adverse change to risk profile?	Subjective Query	Is PFOS the highest measured?	Is PFOA the highest measured?	Is the Sum of PFHxS and PFOS the highest measured?	Is the Sum of PFAS the highest measured?	Is PFOS >85th%ile?	Is PFOA >85th%ile?	Is the Sum of PFHxS and PFOS >85th%ile?	Is the Sum of PFAS >85th%ile?	Is PFOS >65th%ile?	Is PFOA >65th%ile?	Is the Sum of PFHxS and PFOS >65th%ile?	Is the Sum of PFAS >65th%ile?	Is PFOS showing a visually increasing trend over the last three years?	Is PFOA showing a visually increasing trend over the last three years?	Is the Sum of PFHxS and PFOS showing an visually increasing trend over the last three years?	Is the Sum of PFAS showing a visually increasing trend over the last three years?	Is PFOS measurement verified?	Is PFOA measurement verified?	Is Sum of PFHxS and PFOS measurement verified?	Is Sum of PFAS measurement verified?		
	ug/L	ug/L	ug/L	ug/L	ug/L																													
EQL	0.002	0.001	0.01		0.01																													
PFAS NEMP 2.0 2020 Drinking Water*	0.07	0.56	0.07	0.07																														
PFAS NEMP 2.0 2020 Recreational Water**	2	10	2	2																														
PFAS NEMP 2.0 2020 95% Eco Marine Water***	0.13	220																																

Location Code Date

TBV - to be verified. Data validation and site-specific conditions have been considered - further verification will be via continuation of the OMP
NR - not required. No further action is required at the moment.
Conditional formatting of PFAS concentrations for visual trend analysis limited to the wet season. Conditional formatting not used when PFAS measured below LOR.
Data measured below detection (<LOR) reported as a concentration equal to the LOR (and shaded in grey).
* = Drinking water guidelines apply only to Off-Base surface water results.
** = Recreation guidelines apply to On-Base and Off-Base surface water results.
*** = Ecological guidelines apply to Off Base surface water and On-Base dam (i.e., SW139, SW140, and SW144) results.

Appendix C

Laboratory Reports

CERTIFICATE OF ANALYSIS

Work Order	: **EB2434985**	Page	: 1 of 25
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 11-Oct-2024 07:50
Order number	: PS129286	Date Analysis Commenced	: 12-Oct-2024
C-O-C number	: ----	Issue Date	: 22-Oct-2024 15:02
Sampler	: [redacted]		
Site	: Lavarack Barracks, Townsville		
Quote number	: EB23PARBRIQLD0014		
No. of samples received	: 50		
No. of samples analysed	: 50		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
	Senior Chemist - Organics	Brisbane Soil Preparation, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: Samples (EB2434985-028) and (EB2434985-029) required dilution due to the presence of high-level contaminants. LOR values have been adjusted accordingly.
- EP231X - PFAS: Particular samples showed matrix interference indicated by internal standard recovery less than 50% and/or greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- EP231X PFAS: The LOR for particular analytes have been raised due to matrix interference.
- EP231X PFAS: Samples '0229_SD121_241009' (EB2434985-002), '0229_SD109_241009' (EB2434985-003) and '0229_SD110_241009' (EB2434985-004) required dilutions prior to analysis due to high-level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: Matrix spike recovery for sample '0229_SD121_241009' (EB2434985-002) is not determined due to dilution of primary sample.
- EP231X PFAS: Surrogate recoveries have been deemed not determined due to sample dilution.
- EP231X PFAS: Particular samples showed matrix interference indicated by internal standard recovery less than 50% and greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- EP231X PFAS: Sample '0229_SD220_241008' (EB2434985-022) shows poor matrix spike recovery due to possible sample heterogeneity. Confirmed by visual inspection.
- EP231X PFAS: The LOR of PFHpS for sample '0229_SD220_241008' (EB2434985-022) has been raised due to matrix interference.
- EP231X PFAS: The LORs of particular analytes for particular samples have been raised due to sample matrix interferences (Internal Standard Suppression).
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per USEPA 1633 limits where LISTED. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD119_241009	0229_SD121_241009	0229_SD109_241009	0229_SD110_241009	0229_SD129_241009
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2434985-001	EB2434985-002	EB2434985-003	EB2434985-004	EB2434985-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**18.5**	**9.4**	**62.8**	**68.6**	**0.5**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		**0.0005**	**0.0450**	**0.0106**	**0.0050**	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		**0.0005**	**0.0578**	<0.0098	**0.0034**	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0035**	**0.502**	**0.149**	**0.0425**	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	**0.0201**	**0.0251**	<0.0080	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0021**	**0.418**	**2.05**	**0.667**	**0.0004**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0010	<0.0098	<0.0347	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	**0.010**	<0.049	<0.005	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	**0.0168**	**0.0145**	**0.0022**	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0007**	**0.120**	**0.0225**	**0.0072**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	**0.0108**	<0.0098	**0.0016**	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0003**	**0.0435**	**0.0145**	**0.0039**	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	**0.0680**	<0.0098	<0.0015	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0010	<0.0098	<0.0010	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	**0.0015**	<0.0098	<0.0023	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0010	<0.0098	<0.0037	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0010	<0.0098	**0.0026**	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0025	<0.0246	<0.0024	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0010	**0.0212**	**0.0405**	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD119_241009	0229_SD121_241009	0229_SD109_241009	0229_SD110_241009	0229_SD129_241009
			Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2434985-001	EB2434985-002	EB2434985-003	EB2434985-004	EB2434985-005
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0025	<0.0246	<0.0024	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0025	<0.0246	<0.0024	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0025	<0.0246	<0.0024	<0.0020
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0025	<0.0246	<0.0024	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0010	<0.0098	<0.0010	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0010	<0.0098	<0.0010	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0010	<0.0098	<0.0010	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0010	<0.0098	<0.0010	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0010	<0.0098	<0.0010	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0010	<0.0098	<0.0010	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0076**	**1.31**	**2.31**	**0.776**	**0.0004**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0056**	**0.920**	**2.20**	**0.710**	**0.0004**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0071**	**1.17**	**2.26**	**0.729**	**0.0004**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**96.5**	**90.0**	**100**	**Not Determined**	**106**
13C8-PFOA	----	0.0002	%	**102**	**100**	**100**	**Not Determined**	**104**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD130_241009	0229_SD139_241009	0229_SD140_241009	0229_SD144_241009	0229_SD113_241009
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2434985-006	EB2434985-007	EB2434985-008	EB2434985-009	EB2434985-010
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**0.4**	**70.0**	**35.8**	**75.6**	**1.3**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	**0.0014**	**0.0003**	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	**0.0013**	**0.0003**	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	**0.0096**	**0.0030**	**0.0004**	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0010	**0.0004**	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0007**	**0.0688**	**0.0245**	**0.0052**	**0.0008**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0006	**0.0007**	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	**0.0003**	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	**0.0014**	**0.0004**	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	**0.0005**	**0.0002**	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD130_241009	0229_SD139_241009	0229_SD140_241009	0229_SD144_241009	0229_SD113_241009
			Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2434985-006	EB2434985-007	EB2434985-008	EB2434985-009	EB2434985-010
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0007**	**0.0833**	**0.0298**	**0.0056**	**0.0008**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0007**	**0.0784**	**0.0275**	**0.0056**	**0.0008**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0007**	**0.0820**	**0.0284**	**0.0056**	**0.0008**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**87.5**	**114**	**108**	**89.0**	**88.5**
13C8-PFOA	----	0.0002	%	**98.5**	**104**	**95.5**	**99.0**	**99.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD120_241009	0229_SD126_241009	0229_SD128_241009	0229_SD132_241009	0229_SD133_241009
			Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2434985-011	EB2434985-012	EB2434985-013	EB2434985-014	EB2434985-015
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**1.8**	**9.3**	**10.1**	**52.7**	**1.6**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0007**	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0007**	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	**0.0005**	**0.0085**	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0012**	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0018**	<0.0002	**0.0019**	**0.0380**	**0.0006**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0005**	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0008**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0004**	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0013**	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD120_241009	0229_SD126_241009	0229_SD128_241009	0229_SD132_241009	0229_SD133_241009
			Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2434985-011	EB2434985-012	EB2434985-013	EB2434985-014	EB2434985-015
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0018**	<0.0002	**0.0024**	**0.0521**	**0.0006**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0018**	<0.0002	**0.0024**	**0.0465**	**0.0006**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0018**	<0.0002	**0.0024**	**0.0484**	**0.0006**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**98.5**	**112**	**89.0**	**106**	**109**
13C8-PFOA	----	0.0002	%	**98.0**	**106**	**98.0**	**93.0**	**99.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD134_241009	0229_SD135_241009	0229_SD136_241009	0229_SD203_241009	0229_SD205_241009
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2434985-016	EB2434985-017	EB2434985-018	EB2434985-019	EB2434985-020
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**72.7**	**7.2**	**0.6**	**32.6**	**29.6**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	**0.0017**	**0.0016**	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0010	**0.0004**	**0.0005**	**0.0116**	**0.0004**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD134_241009	0229_SD135_241009	0229_SD136_241009	0229_SD203_241009	0229_SD205_241009
			Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2434985-016	EB2434985-017	EB2434985-018	EB2434985-019	EB2434985-020
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	<0.0002	**0.0004**	**0.0022**	**0.0132**	**0.0004**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	**0.0004**	**0.0022**	**0.0132**	**0.0004**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	**0.0004**	**0.0022**	**0.0132**	**0.0004**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**120**	**96.0**	**103**	**84.5**	**102**
13C8-PFOA	----	0.0002	%	**101**	**96.0**	**94.5**	**99.0**	**109**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD217_241009	0229_SD220_241008	0229_SD232_241008	0229_SD233_241008	0229_SD242_241008
			Sampling date / time	09-Oct-2024 00:00	08-Oct-2024 00:00	08-Oct-2024 00:00	08-Oct-2024 00:00	08-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2434985-021	EB2434985-022	EB2434985-023	EB2434985-024	EB2434985-025
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**39.9**	**57.2**	**55.9**	**60.1**	**54.2**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0002**	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	**0.0025**	<0.0002	**0.0020**	**0.0006**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0003	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0007**	**0.0098**	**0.0012**	**0.0142**	**0.0035**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0002**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**0.0003**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD217_241009	0229_SD220_241008	0229_SD232_241008	0229_SD233_241008	0229_SD242_241008
			Sampling date / time	09-Oct-2024 00:00	08-Oct-2024 00:00	08-Oct-2024 00:00	08-Oct-2024 00:00	08-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2434985-021	EB2434985-022	EB2434985-023	EB2434985-024	EB2434985-025
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0013	<0.0005	<0.0025	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0013	<0.0005	<0.0025	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0007**	**0.0123**	**0.0012**	**0.0166**	**0.0044**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0007**	**0.0123**	**0.0012**	**0.0162**	**0.0041**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0007**	**0.0123**	**0.0012**	**0.0166**	**0.0044**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**102**	**112**	**104**	**91.5**	**103**
13C8-PFOA	----	0.0002	%	**99.0**	**97.5**	**96.5**	**97.5**	**94.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD243_241008	0229_QC100_241008	0229_QC101_241009	0229_QC102_241009	----
				Sampling date / time	08-Oct-2024 00:00	08-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	----
Compound	CAS Number	LOR	Unit		EB2434985-026	EB2434985-044	EB2434985-045	EB2434985-046	--------
					Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**34.4**	**50.8**	**62.1**	**41.1**	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	**0.0008**	**0.0003**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	**0.0006**	**0.0002**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	**0.0065**	**0.0028**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	**0.0011**	**0.0003**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	**0.0027**	**0.0625**	**0.0240**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	**0.0003**	**0.0005**	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	**0.0008**	**0.0003**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	**0.0002**	**0.0004**	**0.0002**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	**0.0003**	<0.0002	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	**0.0007**	<0.0002	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0229_SD243_241008	0229_QC100_241008	0229_QC101_241009	0229_QC102_241009	----
			Sampling date / time	08-Oct-2024 00:00	08-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	----
Compound	CAS Number	LOR	Unit	EB2434985-026	EB2434985-044	EB2434985-045	EB2434985-046	--------
				Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0012	<0.0005	<0.0005	<0.0005	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0012	<0.0005	<0.0025	<0.0012	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0014	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	<0.0002	**0.0029**	**0.0740**	**0.0286**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	**0.0027**	**0.0690**	**0.0268**	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	**0.0029**	**0.0710**	**0.0276**	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**95.0**	**113**	**109**	**102**	----
13C8-PFOA	----	0.0002	%	**91.0**	**92.5**	**97.5**	**97.0**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW119_241009	0229_SW121_241009	0229_SW109_241009	0229_SW139_241009	0229_SW140_241009
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2434985-027	EB2434985-028	EB2434985-029	EB2434985-030	EB2434985-031
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.24**	**1.02**	**5.19**	**0.23**	**0.21**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.14**	**1.10**	**4.15**	**0.16**	**0.16**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.91**	**9.12**	**35.3**	**1.29**	**1.11**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.04**	**0.21**	**1.97**	**0.08**	**0.06**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.64**	**2.84**	**161**	**1.73**	**1.52**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.09	<0.52	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.4	<2.6	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.07**	**0.32**	**2.49**	**0.08**	**0.07**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.25**	**2.22**	**13.6**	**0.36**	**0.32**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.03**	**0.13**	**0.78**	**0.04**	**0.04**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.06**	**0.32**	**2.54**	**0.09**	**0.08**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.18**	**0.78**	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.09	<0.52	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.09	<0.52	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.09	<0.52	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.09	<0.52	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.22	<1.30	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.09	<0.52	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.22	<1.30	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW119_241009	0229_SW121_241009	0229_SW109_241009	0229_SW139_241009	0229_SW140_241009
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2434985-027	EB2434985-028	EB2434985-029	EB2434985-030	EB2434985-031
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.22	<1.30	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.22	<1.30	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.22	<1.30	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.09	<0.52	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.09	<0.52	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.09	<0.52	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.09	<0.52	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.09	<0.52	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.09	<0.52	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**2.44**	**17.8**	**230**	**4.14**	**3.64**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.55**	**12.0**	**196**	**3.02**	**2.63**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**2.20**	**16.0**	**221**	**3.82**	**3.35**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**103**	**100**	**104**	**99.4**
13C8-PFOA	----	0.02	%		**94.6**	**97.5**	**99.9**	**98.1**	**102**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW144_241009	0229_SW132_241009	0229_SW134_241009	0229_SW135_241009	0229_SW203_241009
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2434985-032	EB2434985-033	EB2434985-034	EB2434985-035	EB2434985-036
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.04**	**0.61**	<0.02	**0.10**	**0.25**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.51**	<0.02	**0.06**	**0.15**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.14**	**3.25**	<0.01	**0.49**	**1.29**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.25**	<0.02	<0.02	**0.09**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.16**	**3.06**	<0.01	**0.41**	**1.28**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.1**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.13**	<0.02	<0.02	**0.04**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.03**	**0.70**	<0.02	<0.02	**0.20**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.08**	<0.02	<0.02	**0.03**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.21**	<0.01	<0.01	**0.06**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_SW144_241009	0229_SW132_241009	0229_SW134_241009	0229_SW135_241009	0229_SW203_241009
			Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2434985-032	EB2434985-033	EB2434985-034	EB2434985-035	EB2434985-036
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**0.37**	**9.13**	<0.01	**1.09**	**3.46**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.30**	**6.31**	<0.01	**0.90**	**2.57**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.37**	**8.14**	<0.01	**1.00**	**3.15**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**104**	**97.4**	**106**	**99.4**	**108**
13C8-PFOA	----	0.02	%	**103**	**100**	**99.1**	**99.8**	**102**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0229_SW205_241009	0229_SW217_241009	0229_SW220_241008	0229_SW232_241008	0229_SW233_241008
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	08-Oct-2024 00:00	08-Oct-2024 00:00	08-Oct-2024 00:00
					EB2434985-037	EB2434985-038	EB2434985-039	EB2434985-040	EB2434985-041
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.17**	<0.02	**0.12**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.10**	<0.02	**0.11**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.02**	<0.01	**0.96**	**0.01**	**0.77**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.03**	<0.02	**0.04**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.03**	**0.01**	**0.48**	**0.03**	**0.92**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.06**	<0.02	**0.04**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.19**	<0.02	**0.20**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.03**	<0.01	**0.05**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW205_241009	0229_SW217_241009	0229_SW220_241008	0229_SW232_241008	0229_SW233_241008
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	08-Oct-2024 00:00	08-Oct-2024 00:00	08-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2434985-037	EB2434985-038	EB2434985-039	EB2434985-040	EB2434985-041
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.05**	**0.01**	**2.06**	**0.04**	**2.27**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.05**	**0.01**	**1.44**	**0.04**	**1.69**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.05**	**0.01**	**1.89**	**0.04**	**2.12**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**108**	**104**	**108**	**98.1**	**117**
13C8-PFOA	----	0.02	%		**102**	**104**	**102**	**103**	**102**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	0229_SW242_241008	0229_SW243_241008	0229_QC100_241008	0229_QC101_241009	0229_QC102_241009
				Sampling date / time	08-Oct-2024 00:00	08-Oct-2024 00:00	08-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
					EB2434985-042	EB2434985-043	EB2434985-048	EB2434985-049	EB2434985-050
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	**0.16**	**0.14**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.15**	**0.14**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.02**	<0.01	**0.01**	**1.12**	**0.99**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**0.06**	**0.06**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.09**	<0.01	**0.10**	**1.24**	**1.24**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	**0.06**	**0.06**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.31**	**0.28**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.04**	**0.03**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.08**	**0.08**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_SW242_241008	0229_SW243_241008	0229_QC100_241008	0229_QC101_241009	0229_QC102_241009
			Sampling date / time	08-Oct-2024 00:00	08-Oct-2024 00:00	08-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2434985-042	EB2434985-043	EB2434985-048	EB2434985-049	EB2434985-050
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**0.11**	<0.01	**0.11**	**3.22**	**3.02**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.11**	<0.01	**0.11**	**2.36**	**2.23**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.11**	<0.01	**0.11**	**3.01**	**2.82**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**100**	**104**	**101**	**102**	**104**
13C8-PFOA	----	0.02	%	**102**	**104**	**103**	**105**	**106**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC500_241009 Trip Blank	----	----	----	----
				Sampling date / time	09-Oct-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2434985-051	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC500_241009 Trip Blank	----	----	----	----
				Sampling date / time	09-Oct-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2434985-051	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	----	----	----	----
13C8-PFOA	----	0.02	%		**106**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2434985**	Page	: 1 of 13
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 11-Oct-2024
Order number	: PS129286	Date Analysis Commenced	: 12-Oct-2024
C-O-C number	: ----	Issue Date	: 22-Oct-2024
Sampler	: [redacted] [redacted]		
Site	: Lavarack Barracks, Townsville		
Quote number	: EB23PARBRIQLD0014		
No. of samples received	: 50		
No. of samples analysed	: 50		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
[redacted]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
[redacted]	Senior Chemist - Organics	Brisbane Soil Preparation, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6116341)									
EB2434985-001	0229_SD119_241009	EA055: Moisture Content	----	0.1	%	18.5	20.0	7.4	0% - 20%
EB2434985-011	0229_SD120_241009	EA055: Moisture Content	----	0.1	%	1.8	1.7	7.4	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6116342)									
EB2434985-021	0229_SD217_241009	EA055: Moisture Content	----	0.1	%	39.9	37.1	7.2	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6119068)									
EB2434985-001	0229_SD119_241009	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0005	0.0005	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0005	0.0006	31.6	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0035	0.0037	6.0	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0021	0.0018	14.0	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2434985-011	0229_SD120_241009	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0018	0.0017	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6119069)									
EB2434985-021	0229_SD217_241009	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6119069) - continued									
EB2434985-021	0229_SD217_241009	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0007	0.0009	22.2	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2434997-007	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119068)									
EB2434985-001	0229_SD119_241009	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0007	0.0008	13.5	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2434985-011	0229_SD120_241009	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119069)									
EB2434985-021	0229_SD217_241009	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119069) - continued									
EB2434985-021	0229_SD217_241009	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2434997-007	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119068)									
EB2434985-001	0229_SD119_241009	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2434985-011	0229_SD120_241009	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119068) - continued									
EB2434985-011	0229_SD120_241009	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119069)									
EB2434985-021	0229_SD217_241009	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005 (0.0013)*	mg/kg	<0.0013	<0.0013	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005 (0.0013)*	mg/kg	<0.0013	<0.0013	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2434997-007	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119068)									
EB2434985-001	0229_SD119_241009	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119068) - continued									
EB2434985-001	0229_SD119_241009	EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2434985-011	0229_SD120_241009	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119069)									
EB2434985-021	0229_SD217_241009	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2434997-007	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6119068)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	97.3	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	104	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	89.4	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	117	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	94.0	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	102	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6119069)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	119	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	111	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	87.7	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	97.0	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	84.0	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	93.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119068)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	90.4	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.8	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.8	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	100	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.2	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	113	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119069)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	87.1	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.8	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.4	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	100	71.0	131

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119069) - continued								
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.2	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.0	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.6	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	127	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	93.4	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119068)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	109	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.4	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	87.0	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	89.7	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119069)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	110	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	95.5	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.8	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.9	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	130	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	101	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119068)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	109	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	116	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	99.6	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	124	54.8	124

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119069)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	116	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	112	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	92.5	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	90.4	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6119455)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	112	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	112	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	98.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	105	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	108	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	114	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6119462)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	81.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	88.9	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	82.8	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	86.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	83.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	87.8	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119455)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	109	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	102	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	102	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	105	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	106	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	109	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	103	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	104	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	113	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119462)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119462) - continued								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	87.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	84.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	80.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	86.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	83.2	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	87.8	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	93.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	98.0	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	87.8	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119455)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	95.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	80.1	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	83.0	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	93.8	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	96.4	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	106	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	94.8	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119462)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	82.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	93.3	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	81.8	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	86.3	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.9	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	92.2	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	82.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119455)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119455) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	121	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	116	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	120	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	108	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119462)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	77.9	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	103	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	86.2	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	76.6	64.2	133

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6119068)							
EB2434985-002	0229_SD121_241009	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	# Not Determined	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	# Not Determined	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	# Not Determined	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	# Not Determined	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6119069)							
EB2434985-022	0229_SD220_241008	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	118	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	122	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	# 56.2	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	107	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	91.7	59.0	134

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119068)							
EB2434985-002	0229_SD121_241009	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	# Not Determined	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	# Not Determined	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	# Not Determined	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	# Not Determined	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	# Not Determined	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	# Not Determined	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	# Not Determined	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	# Not Determined	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119069)							
EB2434985-022	0229_SD220_241008	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	96.0	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	100.0	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	111	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	110	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	106	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	109	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	124	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	130	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	132	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	# 165	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	131	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119068)							
EB2434985-002	0229_SD121_241009	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	# Not Determined	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# Not Determined	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119068) - continued							
EB2434985-002	0229_SD121_241009	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	# Not Determined	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	# Not Determined	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119069)							
EB2434985-022	0229_SD220_241008	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	119	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	127	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	118	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	122	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	111	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	# 172	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	# 159	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119068)							
EB2434985-002	0229_SD121_241009	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	# Not Determined	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	# Not Determined	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	# Not Determined	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	# Not Determined	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119069)							
EB2434985-022	0229_SD220_241008	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	129	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	134	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	108	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	79.2	54.8	124

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2434985**	Page	: 1 of 10
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 11-Oct-2024
Site	: Lavarack Barracks, Townsville	Issue Date	: 22-Oct-2024
Sampler	: [redacted]	No. of samples received	: 50
Order number	: PS129286	No. of samples analysed	: 50

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2434985--002	0229_SD121_241009	**Perfluorobutane sulfonic acid (PFBS)**	375-73-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2434985--002	0229_SD121_241009	**Perfluoropentane sulfonic acid (PFPeS)**	2706-91-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2434985--002	0229_SD121_241009	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2434985--022	0229_SD220_241008	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	56.2 %	67.0-130%	**Recovery less than lower data quality objective**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2434985--002	0229_SD121_241009	**Perfluoroheptane sulfonic acid (PFHpS)**	375-92-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2434985--002	0229_SD121_241009	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2434985--002	0229_SD121_241009	**Perfluoropentanoic acid (PFPeA)**	2706-90-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2434985--002	0229_SD121_241009	**Perfluorohexanoic acid (PFHxA)**	307-24-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2434985--002	0229_SD121_241009	**Perfluoroheptanoic acid (PFHpA)**	375-85-9	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2434985--002	0229_SD121_241009	**Perfluorooctanoic acid (PFOA)**	335-67-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2434985--002	0229_SD121_241009	**Perfluorononanoic acid (PFNA)**	375-95-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2434985--022	0229_SD220_241008	**Perfluorotridecanoic acid (PFTrDA)**	72629-94-8	165 %	66.0-139%	**Recovery greater than upper data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2434985--022	0229_SD220_241008	**N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)**	2355-31-9	172 %	63.0-144%	**Recovery greater than upper data quality objective**

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries - Continued							
EP231C: Perfluoroalkyl Sulfonamides	EB2434985--022	0229_SD220_241008	**N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)**	2991-50-6	159 %	61.0-139%	**Recovery greater than upper data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	37	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	37	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)								
HDPE Soil Jar (EA055)								
0229_SD220_241008,	0229_SD232_241008,	**08-Oct-2024**	**----**	----	----	**14-Oct-2024**	22-Oct-2024	✓
0229_SD233_241008,	0229_SD242_241008,							
0229_SD243_241008,	0229_QC100_241008							
HDPE Soil Jar (EA055)								
0229_SD119_241009,	0229_SD121_241009,	**09-Oct-2024**	**----**	----	----	**14-Oct-2024**	23-Oct-2024	✓
0229_SD109_241009,	0229_SD110_241009,							
0229_SD129_241009,	0229_SD130_241009,							
0229_SD139_241009,	0229_SD140_241009,							
0229_SD144_241009,	0229_SD113_241009,							
0229_SD120_241009,	0229_SD126_241009,							
0229_SD128_241009,	0229_SD132_241009,							
0229_SD133_241009,	0229_SD134_241009,							
0229_SD135_241009,	0229_SD136_241009,							
0229_SD203_241009,	0229_SD205_241009,							
0229_SD217_241009,	0229_QC101_241009,							
0229_QC102_241009								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0229_SD220_241008, 0229_SD232_241008, 0229_SD233_241008, 0229_SD242_241008, 0229_SD243_241008, 0229_QC100_241008	**08-Oct-2024**	**15-Oct-2024**	06-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓
HDPE Soil Jar (EP231X)							
0229_SD119_241009, 0229_SD121_241009, 0229_SD109_241009, 0229_SD110_241009, 0229_SD129_241009, 0229_SD130_241009, 0229_SD139_241009, 0229_SD140_241009, 0229_SD144_241009, 0229_SD113_241009, 0229_SD120_241009, 0229_SD126_241009, 0229_SD128_241009, 0229_SD132_241009, 0229_SD133_241009, 0229_SD134_241009, 0229_SD135_241009, 0229_SD136_241009, 0229_SD203_241009, 0229_SD205_241009, 0229_SD217_241009, 0229_QC101_241009, 0229_QC102_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
0229_SD220_241008, 0229_SD232_241008, 0229_SD233_241008, 0229_SD242_241008, 0229_SD243_241008, 0229_QC100_241008	**08-Oct-2024**	**15-Oct-2024**	06-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓
HDPE Soil Jar (EP231X)							
0229_SD119_241009, 0229_SD121_241009, 0229_SD109_241009, 0229_SD110_241009, 0229_SD129_241009, 0229_SD130_241009, 0229_SD139_241009, 0229_SD140_241009, 0229_SD144_241009, 0229_SD113_241009, 0229_SD120_241009, 0229_SD126_241009, 0229_SD128_241009, 0229_SD132_241009, 0229_SD133_241009, 0229_SD134_241009, 0229_SD135_241009, 0229_SD136_241009, 0229_SD203_241009, 0229_SD205_241009, 0229_SD217_241009, 0229_QC101_241009, 0229_QC102_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
0229_SD220_241008, 0229_SD232_241008, 0229_SD233_241008, 0229_SD242_241008, 0229_SD243_241008, 0229_QC100_241008	**08-Oct-2024**	**15-Oct-2024**	06-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓
HDPE Soil Jar (EP231X)							
0229_SD119_241009, 0229_SD121_241009, 0229_SD109_241009, 0229_SD110_241009, 0229_SD129_241009, 0229_SD130_241009, 0229_SD139_241009, 0229_SD140_241009, 0229_SD144_241009, 0229_SD113_241009, 0229_SD120_241009, 0229_SD126_241009, 0229_SD128_241009, 0229_SD132_241009, 0229_SD133_241009, 0229_SD134_241009, 0229_SD135_241009, 0229_SD136_241009, 0229_SD203_241009, 0229_SD205_241009, 0229_SD217_241009, 0229_QC101_241009, 0229_QC102_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0229_SD220_241008, 0229_SD232_241008, 0229_SD233_241008, 0229_SD242_241008, 0229_SD243_241008, 0229_QC100_241008	**08-Oct-2024**	**15-Oct-2024**	06-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓
HDPE Soil Jar (EP231X)							
0229_SD119_241009, 0229_SD121_241009, 0229_SD109_241009, 0229_SD110_241009, 0229_SD129_241009, 0229_SD130_241009, 0229_SD139_241009, 0229_SD140_241009, 0229_SD144_241009, 0229_SD113_241009, 0229_SD120_241009, 0229_SD126_241009, 0229_SD128_241009, 0229_SD132_241009, 0229_SD133_241009, 0229_SD134_241009, 0229_SD135_241009, 0229_SD136_241009, 0229_SD203_241009, 0229_SD205_241009, 0229_SD217_241009, 0229_QC101_241009, 0229_QC102_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0229_SD220_241008, 0229_SD232_241008, 0229_SD233_241008, 0229_SD242_241008, 0229_SD243_241008, 0229_QC100_241008	**08-Oct-2024**	**15-Oct-2024**	06-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓
HDPE Soil Jar (EP231X) 0229_SD119_241009, 0229_SD121_241009, 0229_SD109_241009, 0229_SD110_241009, 0229_SD129_241009, 0229_SD130_241009, 0229_SD139_241009, 0229_SD140_241009, 0229_SD144_241009, 0229_SD113_241009, 0229_SD120_241009, 0229_SD126_241009, 0229_SD128_241009, 0229_SD132_241009, 0229_SD133_241009, 0229_SD134_241009, 0229_SD135_241009, 0229_SD136_241009, 0229_SD203_241009, 0229_SD205_241009, 0229_SD217_241009, 0229_QC101_241009, 0229_QC102_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0229_SW220_241008, 0229_SW232_241008	**08-Oct-2024**	**15-Oct-2024**	06-Apr-2025	✓	**16-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_SW233_241008, 0229_SW242_241008, 0229_SW243_241008, 0229_QC100_241008	**08-Oct-2024**	**16-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_SW119_241009, 0229_SW121_241009, 0229_SW109_241009, 0229_SW139_241009, 0229_SW140_241009, 0229_SW144_241009, 0229_SW132_241009, 0229_SW134_241009, 0229_SW135_241009, 0229_SW203_241009, 0229_SW205_241009, 0229_SW217_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_QC101_241009, 0229_QC102_241009, 0229_QC500_241009 - Trip Blank	**09-Oct-2024**	**16-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0229_SW220_241008, 0229_SW232_241008	**08-Oct-2024**	**15-Oct-2024**	06-Apr-2025	✓	**16-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_SW233_241008, 0229_SW242_241008, 0229_SW243_241008, 0229_QC100_241008	**08-Oct-2024**	**16-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_SW119_241009, 0229_SW121_241009, 0229_SW109_241009, 0229_SW139_241009, 0229_SW140_241009, 0229_SW144_241009, 0229_SW132_241009, 0229_SW134_241009, 0229_SW135_241009, 0229_SW203_241009, 0229_SW205_241009, 0229_SW217_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_QC101_241009, 0229_QC102_241009, 0229_QC500_241009 - Trip Blank	**09-Oct-2024**	**16-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0229_SW220_241008, 0229_SW232_241008	**08-Oct-2024**	**15-Oct-2024**	06-Apr-2025	✓	**16-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_SW233_241008, 0229_SW242_241008, 0229_SW243_241008, 0229_QC100_241008	**08-Oct-2024**	**16-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_SW119_241009, 0229_SW121_241009, 0229_SW109_241009, 0229_SW139_241009, 0229_SW140_241009, 0229_SW144_241009, 0229_SW132_241009, 0229_SW134_241009, 0229_SW135_241009, 0229_SW203_241009, 0229_SW205_241009, 0229_SW217_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_QC101_241009, 0229_QC102_241009, 0229_QC500_241009 - Trip Blank	**09-Oct-2024**	**16-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0229_SW220_241008, 0229_SW232_241008	**08-Oct-2024**	**15-Oct-2024**	06-Apr-2025	✓	**16-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_SW233_241008, 0229_SW242_241008, 0229_SW243_241008, 0229_QC100_241008	**08-Oct-2024**	**16-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_SW119_241009, 0229_SW121_241009, 0229_SW109_241009, 0229_SW139_241009, 0229_SW140_241009, 0229_SW144_241009, 0229_SW132_241009, 0229_SW134_241009, 0229_SW135_241009, 0229_SW203_241009, 0229_SW205_241009, 0229_SW217_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_QC101_241009, 0229_QC102_241009, 0229_QC500_241009 - Trip Blank	**09-Oct-2024**	**16-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0229_SW220_241008, 0229_SW232_241008	**08-Oct-2024**	**15-Oct-2024**	06-Apr-2025	✓	**16-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_SW233_241008, 0229_SW242_241008, 0229_SW243_241008, 0229_QC100_241008	**08-Oct-2024**	**16-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_SW119_241009, 0229_SW121_241009, 0229_SW109_241009, 0229_SW139_241009, 0229_SW140_241009, 0229_SW144_241009, 0229_SW132_241009, 0229_SW134_241009, 0229_SW135_241009, 0229_SW203_241009, 0229_SW205_241009, 0229_SW217_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0229_QC101_241009, 0229_QC102_241009, 0229_QC500_241009 - Trip Blank	**09-Oct-2024**	**16-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	3	29	**10.34**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	37	**10.81**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	37	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	37	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2434985**

Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: +61 7 3552 8616
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: QLD_0874_PFASMGMT_24	Page	: 1 of 5
Order number	: PS129286	Quote number	: EB2023PARBRIQLD0014 (EB23PARBRIQLD0014)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Lavarack Barracks, Townsville		
Sampler	: [redacted]		

Dates

Date Samples Received	: 11-Oct-2024 07:50	Issue Date	: 11-Oct-2024
Client Requested Due Date	: 21-Oct-2024	Scheduled Reporting Date	: **21-Oct-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 1.9°C, 2.7°C, 3.8°C - Ice present
Receipt Detail	: ESKY LARGE	No. of samples received / analysed	: 50 / 50

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***Samples were originally received by ALS Townsville on 10/10/24, and forwarded to ALS Brisbane for analysis.**
- **Please be advised the soil sample for 'QC500' (Trip Blank) was not received by the laboratory, denoted SNR on the scanned COC.**
- **Please be advised 'QC100' (ALS ID #44 and #48), 'QC101' (ALS ID #45 and #49) and 'QC102' (ALS ID #46 and #50) have been split into separate samples due to different sample matrix. If you wish to discuss this, please contact Client services at [redacted] or ph: [redacted]**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Samples "QC200", "QC201" and "QC202" have been forwarded to Eurofins, as requested. Please note that this will incur a freight forwarding fee.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EB2434985-051 : [09-Oct-2024] : 0229_QC500_241009 - Trip Blank

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (30 analytes)
EB2434985-001	09-Oct-2024 00:00	0229_SD119_241009	✓	✓
EB2434985-002	09-Oct-2024 00:00	0229_SD121_241009	✓	✓
EB2434985-003	09-Oct-2024 00:00	0229_SD109_241009	✓	✓
EB2434985-004	09-Oct-2024 00:00	0229_SD110_241009	✓	✓
EB2434985-005	09-Oct-2024 00:00	0229_SD129_241009	✓	✓
EB2434985-006	09-Oct-2024 00:00	0229_SD130_241009	✓	✓
EB2434985-007	09-Oct-2024 00:00	0229_SD139_241009	✓	✓
EB2434985-008	09-Oct-2024 00:00	0229_SD140_241009	✓	✓
EB2434985-009	09-Oct-2024 00:00	0229_SD144_241009	✓	✓
EB2434985-010	09-Oct-2024 00:00	0229_SD113_241009	✓	✓
EB2434985-011	09-Oct-2024 00:00	0229_SD120_241009	✓	✓
EB2434985-012	09-Oct-2024 00:00	0229_SD126_241009	✓	✓
EB2434985-013	09-Oct-2024 00:00	0229_SD128_241009	✓	✓
EB2434985-014	09-Oct-2024 00:00	0229_SD132_241009	✓	✓
EB2434985-015	09-Oct-2024 00:00	0229_SD133_241009	✓	✓
EB2434985-016	09-Oct-2024 00:00	0229_SD134_241009	✓	✓
EB2434985-017	09-Oct-2024 00:00	0229_SD135_241009	✓	✓
EB2434985-018	09-Oct-2024 00:00	0229_SD136_241009	✓	✓
EB2434985-019	09-Oct-2024 00:00	0229_SD203_241009	✓	✓
EB2434985-020	09-Oct-2024 00:00	0229_SD205_241009	✓	✓
EB2434985-021	09-Oct-2024 00:00	0229_SD217_241009	✓	✓
EB2434985-022	08-Oct-2024 00:00	0229_SD220_241008	✓	✓
EB2434985-023	08-Oct-2024 00:00	0229_SD232_241008	✓	✓
EB2434985-024	08-Oct-2024 00:00	0229_SD233_241008	✓	✓
EB2434985-025	08-Oct-2024 00:00	0229_SD242_241008	✓	✓
EB2434985-026	08-Oct-2024 00:00	0229_SD243_241008	✓	✓
EB2434985-044	08-Oct-2024 00:00	0229_QC100_241008	✓	✓
EB2434985-045	09-Oct-2024 00:00	0229_QC101_241009	✓	✓
EB2434985-046	09-Oct-2024 00:00	0229_QC102_241009	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (31 analytes)
EB2434985-027	09-Oct-2024 00:00	0229_SW119_241009	✓
EB2434985-028	09-Oct-2024 00:00	0229_SW121_241009	✓
EB2434985-029	09-Oct-2024 00:00	0229_SW109_241009	✓
EB2434985-030	09-Oct-2024 00:00	0229_SW139_241009	✓
EB2434985-031	09-Oct-2024 00:00	0229_SW140_241009	✓
EB2434985-032	09-Oct-2024 00:00	0229_SW144_241009	✓
EB2434985-033	09-Oct-2024 00:00	0229_SW132_241009	✓
EB2434985-034	09-Oct-2024 00:00	0229_SW134_241009	✓
EB2434985-035	09-Oct-2024 00:00	0229_SW135_241009	✓
EB2434985-036	09-Oct-2024 00:00	0229_SW203_241009	✓
EB2434985-037	09-Oct-2024 00:00	0229_SW205_241009	✓
EB2434985-038	09-Oct-2024 00:00	0229_SW217_241009	✓
EB2434985-039	08-Oct-2024 00:00	0229_SW220_241008	✓
EB2434985-040	08-Oct-2024 00:00	0229_SW232_241008	✓
EB2434985-041	08-Oct-2024 00:00	0229_SW233_241008	✓
EB2434985-042	08-Oct-2024 00:00	0229_SW242_241008	✓
EB2434985-043	08-Oct-2024 00:00	0229_SW243_241008	✓
EB2434985-048	08-Oct-2024 00:00	0229_QC100_241008	✓
EB2434985-049	09-Oct-2024 00:00	0229_QC101_241009	✓
EB2434985-050	09-Oct-2024 00:00	0229_QC102_241009	✓
EB2434985-051	09-Oct-2024 00:00	0229_QC500_241009 T...	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	[redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	[redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	[redacted]
- A4 - AU Tax Invoice (INV)	Email	[redacted]
- Chain of Custody (CoC) (COC)	Email	[redacted]
- EDI Format - ENMRG (ENMRG)	Email	[redacted]
- EDI Format - XTab (XTAB)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	[redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	[redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	[redacted]
- Chain of Custody (CoC) (COC)	Email	[redacted]
- EDI Format - ENMRG (ENMRG)	Email	[redacted]
- EDI Format - XTab (XTAB)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	[redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	[redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	[redacted]
- A4 - AU Tax Invoice (INV)	Email	[redacted]
- Chain of Custody (CoC) (COC)	Email	[redacted]
- EDI Format - ENMRG (ENMRG)	Email	[redacted]
- EDI Format - XTab (XTAB)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	[redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	[redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	[redacted]
- Chain of Custody (CoC) (COC)	Email	[redacted]
- EDI Format - ENMRG (ENMRG)	Email	[redacted]
- EDI Format - XTab (XTAB)	Email	[redacted]

[redacted]

- A4 - AU Tax Invoice (INV)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	[redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	[redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	[redacted]
- Chain of Custody (CoC) (COC)	Email	[redacted]
- EDI Format - ENMRG (ENMRG)	Email	[redacted]
- EDI Format - XTab (XTAB)	Email	[redacted]

Mandatory Fields

CHAIN OF CUSTODY

Page ___of___

CLIENT CODE:

*PROJECT MANAGER: [redacted]

COMPANY: [redacted]

*CLIENT: WSP Australia Pty Limited

*PM MOBILE: [redacted]

SAMPLER MOBILE:

OFFICE: Level 27, 680 George Street Sydney, 2000

ALS QUOTE # (Client Ref.): EB23PANBNDLOD0104V3

PURCHASE ORDER NO.: PS129386

PROJECT NO./PROJECT: QLD_0076_PEASANGMT_24

SITE: Lavarack Barracks, Townsville

*INVOICE TO: dilini.herath@wsp.com andrew.hollaway@wsp.com

CC (Invoice): [redacted]

BIOSECURITY

*EMAIL REPORTS TO: gld.ns_water_labreports@wsp.com dilini.herath@wsp.com michael.hart@wsp.com

*ANALYSIS REQUIRED

Environmental Division Brisbane

Work Order Reference EB2434985

Telephone : 07 3243 7222

*STD SAMPLE REQUIREMENTS: X Standard Storage; ☐ Extended Storage. Specify Special Instructions. Note: Extended storage may incur costs and requires subject agreement.

*TURNAROUND: X 5 days (100%); ☐ 4 days (125%); ☐ 3 days (150%); ☐ 2 days (175%)

Comments:

ALS Lab Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX	PFAS - Full Suite (28 analytes)	Lab QC (select one) Duplicate	MS	Additional Information
1	0229_SD135_241009		9/10/2024	1	S	X	☐	☐	
2	0229_SD121_241009		9/10/2024	1	S	X	☐	☐	
3	0229_SD109_241009		9/10/2024	1	S	X	☐	☐	
4	0229_SD110_241009		9/10/2024	1	S	X	☐	☐	
5	0229_SD115_241009		9/10/2024	1	S	X	☐	☐	
6	0229_SD139_241009		9/10/2024	1	S	X	☐	☐	
7	0229_SD139_241009		9/10/2024	1	S	X	☐	☐	
8	0229_SD140_241009		9/10/2024	1	S	X	☐	☐	
9	0229_SD144_241009		9/10/2024	1	S	X	☐	☐	
10	0229_SD113_241009		9/10/2024	1	S	X	☐	☐	

Receipt Detail (Lab Use Only): Cooling Method: ___ COC Seals Intact (Y/N): ___ Temperature: ___ °C ___ °C ___ °C (Indicate Sample Temperature on Receipt)

Custody Seals Intact (Y/N): ___ (Indicate)

Carrier Details: ___ ☐ Courier-Post ☐ Client

Receipt Detail: Cooling Method: ___ COC Seals Intact (Y/N): ___ Temperature: ___ °C ___ °C ___ °C (Indicate Sample Temperature on Receipt) Custody Seals Intact (Y/N): ___ (Indicate) Carrier Details: ___ ☐ Courier-Post ☐ Client

Package Count: Hand Delivery: ___ Tracking No.: ___ Temp Blank: ___ Ice Bags/Cubes: ___

Count: 4 ___ ___

Relinquished by: [redacted] Date/Time: 10/9/24 Received by: [redacted] Date/Time: 9/10/2024 15:00

Relinquished by: [redacted] Date/Time: 10/9/24 Received by: [redacted] Date/Time: 9/10/24 9pm

Relinquished by: [redacted] Date/Time: 10/9/24 Received by: [redacted] Date/Time: 11/10/24 0750

Mandatory Fields

CHAIN OF CUSTODY

Page ___of___

CLIENT CODE		*PROJECT MANAGER:	[redacted]	ADDRESS:	[redacted]
*CLIENT:	WSP Australia Pty Limited	*PHONE:	[redacted]	SAMPLER (SIGN)	
OFFICE: (Invoice Office)	Level 27, 680 George Street Sydney, 2000	*ALS QUOTE # (if known)	E823PATBRIGLD0014 V2	PURCHASE ORDER NO	PS820285
PROJECT NO/PROJECT		QLD_0824_PFAS VCMT_24		SITE	Lavarack Barracks, Townsville
*INVOICE TO (if different to above)			alfmi.hoanh@wsp.com andrew.holloway@wsp.com		CC Invoice to (if applicable)
*EMAIL REPORTS TO (will default to PM if blank)					

*** STORAGE REQUIREMENTS** (Please check box →)

- ☒ Standard Storage
- ☐ Extended Storage

Standard for up to 60 days (unless requested otherwise)

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement

***TURNAROUND** (Please check box →)

(Rush turnaround requests accepted (Email quotes for rush requests)

- ☒ 5+ days (Standard)
- ☐ 3 day (+15%)
- ☐ 2 day (+20%)
- ☐ 1 day (+50%)

***ANALYSIS REQUIRED**

ALS will Quote for analysis of Main Cost Codes unless specific requirements are requested. Please specify Test Codes (or Profile Codes) in the comments section if required. Mark with 'X' in the box to indicate the particular suite above to be listed on that sample.

Country of Origin (For Australian Only)

WO Sticker to go here. *ALS use only

ALS Lab Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	Matrix (SO, WS, WG, WP, SD, SS, NP, AS, OT)	*PFAS - Full Suite (32 analytes)	Dup	WS	Additional Information (Comments, Special Handling, Storage or Disposal Instructions)
1	0024_SD_01_241009		9/10/2024	1	S	X	☐	☐	
2	0024_SD_02_241009		9/10/2024	1	S	X	☐	☐	
3	0024_SD_03_241009		9/10/2024	1	S	X	☐	☐	
4	0024_SD_04_241009		9/10/2024	1	S	X	☐	☐	
5	0024_SD_05_241009		9/10/2024	1	S	X	☐	☐	
6	0024_SD_06_241009		9/10/2024	1	S	X	☐	☐	
7	0024_SD_07_241009		9/10/2024	1	S	X	☐	☐	
8	0024_SD_08_241009		9/10/2024	1	S	X	☐	☐	
9	0024_SD_09_241009		9/10/2024	1	S	X	☐	☐	
10	0024_SD_10_241009		9/10/2024	1	S	X	☐	☐	

Receipt Detail (Not Essential for ALS Use)	Cooler Material:	Ice Present / Packs	Temperature Present / Received	Notes	Sample Temperature on Receipt	°C	°C	°C
Security Seal Intact (Y/N)		Courier Docket		Courier / Driver	☐ Courier Pick Up	☐ Other	Packaging Received	Type Esky	Type Esky	Box/Bag/Other
				Comments						

*Relinquished by:	Date:	Signature	Date/Time:	Received By	Signature	Date/Time	
Relinquished by:			Date/Time:	Received By	Signature	Date/Time	

Mandatory Fields

CHAIN OF CUSTODY

Page ___of___

CLIENT: WSP Australia Pty Limited

OFFICE: Level 27, 680 George Street Sydney, 2000

PROJECT: GLO_0074_PFASMGMT_24

SITE: Lavarack Barracks, Townsville

PURCHASE ORDER NO.: PS129286

Lab ID	Sample ID	Depth	Date/Time	No. bottles	Matrix	PFAS - Full Suite (28 analytes)	Lab QC (Dup / MS)	Additional Information
24	GLO_SD217_24_009		9/10/2024	1	S	X	☐ ☐	
25	GLO_SD220_241008		8/10/2024	1	S	X	☐ ☐	
26	GLO_SD231_241008		8/10/2024	1	S	X	☐ ☐	
27	GLO_SD232_241008		8/10/2024	1	S	X	☐ ☐	
28	GLO_SD242_241008		8/10/2024	1	S	X	☐ ☐	
29	GLO_SD243_241008		8/10/2024	1	S	X	☐ ☐	
30	GLO_SW101_241009		9/10/2024	1	W	X	☐ ☐	
31	GLO_SW102_241009		9/10/2024	1	W	X	☐ ☐	
32	GLO_SW103_241009		9/10/2024	1	W	X	☐ ☐	
33	GLO_SW135_241009		9/10/2024	1	W	X	☐ ☐	

Relinquished by: Date/Time: 9/10/2024 Received by: Date/Time:

Relinquished by: Signature: Received by: Signature: Date/Time:

Mandatory Fields

CHAIN OF CUSTODY

Page ___of___

CLIENT CODE:	*PROJECT MANAGER: [redacted]	SAMPLER:	[redacted]
*CLIENT: WSP Australia Pty Limited	PM MOBILE:	SAMPLER MOBILE:	
OFFICE (Invoicing Office): Level 27, 680 George Street Sydney, 2000	A.S QUOTE # (Quote No. if any):	EQUIPMENT NO: EQUIPMENT NOLD0014 V2	PURCHASE ORDER NO: PS129886
PROJECT NO (PROJECT):	QLD_0874_PFASMGMT 24	SITE:	Lawanda Biosolids, Townsville

*INVOICE TO (Invoice Address): [redacted] — ☐ Invoice via PM

BIOSECURITY

EMAIL REPORTS TO (WSP to PM): [redacted]

Country of Origin (if not Australia):

*STORAGE REQUIREMENTS (wsp.com/ts): X Standard Storage; ☐ Extended Storage. Standard Storage = 4 from receipt of sample. Water = 3 months; Soil = 2 months. Specify Disposal Date: . Note: Extended storage & some analytes may incur additional charges.

*TURNAROUND (Please circle): X 5 days (no surcharge); ☐ 3 days (+25%); ☐ 2 days (+35%); ☐ 1 day (+50%). Rush TAT may not be accepted for all tests. Contact Client Services for more information.

*ANALYSIS REQUIRED. Mark an 'X' in the boxes below the analysis to indicate the parameters required. Add extra information in the text box if more space is required.

WO Works to go here (Lab use only)

Comments:

Lab Use Only Sub ID	Sample ID	Depth	Date/Time	No. Bottles	Matrix (Soil/Water (W)/Sediment (SED)/Biosolid (BIO)/Other (O))	PFAS - Full Suite (28 analytes)	Lab QC (please tick) Dup	Lab QC (please tick) MS	Additional information (Comments on sample type, collection & transport conditions)
01	0226_SW140_241009		9/10/2024	1	W	X	☐	☐	
02	0226_SW145_241009		9/10/2024	1	W	X	☐	☐	
03	0226_SW150_241009		9/10/2024	1	W	X	☐	☐	
04	0226_SW154_241009		9/10/2024	1	W	X	☐	☐	
05	0226_SW155_241009		9/10/2024	1	W	X	☐	☐	
06	0226_SW202_241009		9/10/2024	1	W	X	☐	☐	
07	0226_SW203_241009		9/10/2024	1	W	X	☐	☐	
08	0226_SW212_241009		9/10/2024	1	W	X	☐	☐	
09	0226_SW220_241009		9/10/2024	1	W	X	☐	☐	
10	0226_SW222_241009		9/10/2024	1	W	X	☐	☐	

Receipt Seal (Lab Use Only): Chilled: Yes / No; Ice present: Frozen / Thawed / None. Ambient Temp on Receipt: °C. Sample Seal Intact (if applicable): Yes / No / N/A (Other). Custody Details: ☐ Courier/Post ☐ Client. Courier #: . Preserved (Circle): Acid / Alk / Zinc / Zinc Acet / Sod Hex / Other. Cont. #: .

Relinquished by:	Date/Time:	Signature:	Date/Time:	Received by:	Signature:	Date/Time:
Relinquished by:		Signature:	Date/Time:	Received by:	Signature:	Date/Time:

CHAIN OF CUSTODY

Mandatory Fields*

Page __of__

CLIENT ADDRESS:		PROJECT MANAGER:	[redacted]
*CLIENT:	WSP Australia Pty Limited	PM MOBILE:	
OFFICE: Nearest Office	Level 27, 680 George Street Sydney 2000	A_E QUOTE Quote No. (if any)	EQ239PAEBRULD0054.09
PROJECT NO./PROJECT:	QLD_3826_PFAS Mod01_24		
*INVOICE TO (if different to above)		dilesh.heath@wsp.com andrew.thorpe@wsp.com	
*EMAIL REPORT TO (Mandatory)		gladys.wright@wsp.com dave.herrington@wsp.com.au dilesh.heath@wsp.com michael.heath@wsp.com	

SAMPLER: [redacted]

SAMPLER MOBILE: [redacted]

PURCHASE ORDER NO: PS129286

SITE: Lavarack Barracks, Townsville

QC Sample? Y/N

EDD FORMAT:

Country of Origin: (if not Australia)

WC Shipment go here (ALS use only)

*STORAGE REQUIREMENTS Please circle below

Standard Storage (1 month) unless specified below

Extended Storage (Specify Required Date)

Note: Extended storage may incur additional charges

*TURNAROUND (Please circle below)

- X 5 days (no surcharge)
- 3 days (~15%)
- 2 days (~20%)
- 1 day (~50%)

You will be notified if your request cannot be met. Contact ALS Sample Receipt for confirmation

Comments:

*ANALYSIS REQUIRED

Mark in the box below each type of analysis required. Please direct any analysis not listed to the laboratory.

ALS Lab Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	Matrix (S=Soil/Solid, W=Water, SW=Seawater, L=Leachate, A=Air, O=Other)	PFAS (Full Suite (28 analytes))	Lab Use (number of containers) Unp	Lab Use (number of containers) Pre	Additional Information (Comments, special handling, additional analytes, dilutions, or non-standard turnaround requirements)
	0229_SW203_241003		8/10/2024	1	W	X			
	0229_SW207_241003		8/10/2024	1	W	X			
	0229_SW201_241003		8/10/2024	1	W	X			
	0229_QC103_241003		8/10/2024	2	SAW	X			
	0229_QC202_241003		8/10/2024	4	SAW	X			Please send to Eurofins
	0229_QC201_241003		8/10/2024	3	SAW	X			
	0229_QC201_241003		8/10/2024	7	SAW	X			Please send to Eurofins
	0229_QC102_241003		8/10/2024	2	SAW	X			
	0229_QC202_241003		8/10/2024	3	SAW	X			Please send to Eurofins
	0229_QC103_241003		8/10/2024	7	SAW	X			Trip Blank. Please analyse only 0229_QC201_241003

Receipt (Initial Rubbish Bin)

Chilling Required: Yes / No

Ice Bricks: Present / Not Present / None

Sample Temperature on Receipt: °C Ice °C

Special Shipment Yes / No (circle)

Cooler Seal's Intact: Yes / No / Not Required

Courier Name:

Courier Ref:

Direct

Packaging Overall: Good / Poor / Bad

Condition: 1 2 3

Received by: Date/Time: 8/10/2024 17:03

Signature:

Relinquished by: Date/Time:

Received by: Date/Time:

Signature:

Relinquished by: Date/Time:

Signature:

CERTIFICATE OF ANALYSIS

Work Order	: **EB2434987**	Page	: 1 of 7
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 11-Oct-2024 07:50
Order number	: PS129286	Date Analysis Commenced	: 12-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024 12:17
Sampler	: [redacted]		
Site	: ----		
Quote number	: EB23PARBRIQLD0014		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Soil Preparation, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: Samples '0229_SW211_241009' (EB2434987-003) and '0229_SW212_241009' (EB2434987-004) showed matrix interference indicated by internal standard recovery less than 50% and greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- EP231X PFAS: The LOR values for PFHxS and PFBS have been raised in sample '0229_SW211_241009' (EB2434987-003) due to matrix interference.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per USEPA 1633 limits where LISTED. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD211_241009	0229_SD212_241009	----	----	----
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2434987-001	EB2434987-002	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**89.4**	**42.3**	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0036**	**0.0010**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0021**	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		**0.0006**	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0229_SD211_241009	0229_SD212_241009	----	----	----
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2434987-001	EB2434987-002	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0006	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0006	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0006	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0006	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0063**	**0.0010**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0036**	**0.0010**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0036**	**0.0010**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**114**	**102**	----	----	----
13C8-PFOA	----	0.0002	%		**110**	**108**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW211_241009	0229_SW212_241009	----	----	----
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2434987-003	EB2434987-004	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.04	**0.04**	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.04	**0.02**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.03**	**0.03**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_SW211_241009	0229_SW212_241009	----	----	----
			Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB2434987-003	EB2434987-004	--------	--------	--------
				Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	<0.04	**0.09**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.04	**0.05**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.04	**0.09**	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**92.6**	**104**	----	----	----
13C8-PFOA	----	0.02	%	**92.0**	**101**	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2434987**	Page	: 1 of 10
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 11-Oct-2024
Order number	: PS129286	Date Analysis Commenced	: 12-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024
Sampler	: [redacted] [redacted]		
Site	: ----		
Quote number	: EB23PARBRIQLD0014		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Soil Preparation, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6116371)									
EB2434946-001	Anonymous	EA055: Moisture Content	----	0.1	%	12.4	12.8	3.1	0% - 20%
EB2434997-002	Anonymous	EA055: Moisture Content	----	0.1	%	25.7	24.0	6.9	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6118289)									
EB2434723-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0004	0.0003	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2434910-057	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6118289)									
EB2434723-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6118289) - continued									
EB2434723-001	Anonymous	EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2434910-057	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6118289)									
EB2434723-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2434910-057	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6118289) - continued									
EB2434910-057	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6118289)									
EB2434723-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2434910-057	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.05)*	µg/L	6.42	6.90	7.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.05)*	µg/L	9.10	9.75	6.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02 (0.05)*	µg/L	0.83	0.77	7.5	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02 (0.05)*	µg/L	0.90	0.87	4.2	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02 (0.05)*	µg/L	0.34	0.44	25.9	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.05)*	µg/L	0.46	0.45	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02 (0.05)*	µg/L	0.28	0.28	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02 (0.05)*	µg/L	1.32	1.33	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02 (0.05)*	µg/L	0.22	0.22	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119448) - continued									
EB2432605-005	Anonymous	EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1 (0.2)*	µg/L	0.3	<0.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119448)									
EB2432605-005	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.05	0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6118289)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	128	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	114	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	95.3	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	123	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	107	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	113	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6118289)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	107	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	109	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	115	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	115	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	114	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	117	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6118289)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	103	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	121	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	99.7	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	106	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6118289)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6118289) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	130	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	103	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	103	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	93.3	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6119448)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	91.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	85.1	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	93.7	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	93.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	109	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	88.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	95.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	102	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	95.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	101	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	93.0	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.9	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	90.2	62.6	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	107	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	106	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	127	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	123	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	90.4	64.2	133

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6118289)							
EB2434723-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	121	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	110	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	97.4	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	129	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	98.4	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	111	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6118289)							
EB2434723-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	111	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	108	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	106	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	110	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	111	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	113	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	109	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	109	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	118	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	104	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	117	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6118289)							
EB2434723-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	92.8	48.0	128

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6118289) - continued							
EB2434723-002	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	116	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	116	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	96.3	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	103	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	91.6	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	98.0	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6118289)							
EB2434723-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	113	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	120	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	128	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	124	54.8	124

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	102	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	94.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	97.2	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	92.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	97.0	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	107	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	77.1	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	91.1	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.9	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	98.0	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	99.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	97.4	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	105	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	96.3	71.0	132

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	99.2	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	87.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	94.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	87.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	92.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	88.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	98.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	96.4	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	111	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	90.2	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	78.7	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2434987**	Page	: 1 of 5
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 11-Oct-2024
Site	: ----	Issue Date	: 21-Oct-2024
Sampler	: [redacted]	No. of samples received	: 4
Order number	: PS129286	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	5.00	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
HDPE Soil Jar (EA055)								
0229_SD211_241009,	0229_SD212_241009	**09-Oct-2024**	**----**	----	----	**14-Oct-2024**	23-Oct-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X)								
0229_SD211_241009,	0229_SD212_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X)								
0229_SD211_241009,	0229_SD212_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE Soil Jar (EP231X)								
0229_SD211_241009,	0229_SD212_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE Soil Jar (EP231X)								
0229_SD211_241009,	0229_SD212_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X)								
0229_SD211_241009,	0229_SD212_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	24-Nov-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0229_SW211_241009,	0229_SW212_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0229_SW211_241009, 0229_SW212_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0229_SW211_241009, 0229_SW212_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0229_SW211_241009, 0229_SW212_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0229_SW211_241009, 0229_SW212_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2434987**		
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: +61 7 3552 8616
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: QLD_0874_PFASMGMT_24	Page	: 1 of 3
Order number	: PS129286	Quote number	: EB2023PARBRIQLD0014 (EB23PARBRIQLD0014)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 11-Oct-2024 07:50	Issue Date	: 11-Oct-2024
Client Requested Due Date	: 18-Oct-2024	Scheduled Reporting Date	: **18-Oct-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 1.9°C, 2.7°C, 3.8°C - Ice present
Receipt Detail	: ESKY LARGE	No. of samples received / analysed	: 4 / 4

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***Samples were originally received by ALS Townsville on 10/10/24, and forwarded to ALS Brisbane for analysis.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (30 analytes)
EB2434987-001	09-Oct-2024 00:00	0229_SD211_241009	✓	✓
EB2434987-002	09-Oct-2024 00:00	0229_SD212_241009	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (31 analytes)
EB2434987-003	09-Oct-2024 00:00	0229_SW211_241009	✓
EB2434987-004	09-Oct-2024 00:00	0229_SW212_241009	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

[redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

Mandatory Fields

CHAIN OF CUSTODY

Page 1 of 1

CLIENT CODE:	*PROJECT MANAGER: [redacted]	SAMPLER: [redacted]	
*CLIENT: WSP Australia Pty Limited	*PM MOBILE:	SAMPLER MOBILE:	
OFFICE: Level 27, 680 George Street Sydney, 2000	ALS QUOTE # (Lab Use Only): 6499 PARR/QLD0914/22	PURCHASE ORDER NO.:	*# 29186
PROJECT NO. (PROJECT):	QLD_6574_PFASMGMT_24	Site:	Laycock Barracks, Townsville
*INVOICE TO (Default if N/A):	dl[m] hmurch@wsp.com Anc:ww.hn8ovary@wsp.com		☐ CC Invoice to:
*EMAIL REPORTS TO (default if N/A also):	gbLeu_ondet_vbryn@wsp.com dlwp.fabrepc-nsfbuolet.com.au dl[m.]hmurch@wsp.com michelle.n@wsp.com		

SPOSECURITY

Country of Origin (default if N/A):

Environmental Division Brisbane

Work Order Reference

EB2434987

Telephone : 61-7-3243 7222

*STORAGE REQUIREMENTS (Select One): ☒ Standard Storage ☐ Extended Storage

Specify Disposal Date:

Note: Extended storage incurs a fee and requires additional agreement.

*TURNAROUND (Mandatory): ☒ 5+ days (standard surcharge) ☐ 3 day (+15%) ☐ 2 day (+20%) ☐ 1 day (+50%)

(Work order is to be suspended, if extended turnaround time is required information)

Comments:

*ANALYSIS REQUIRED (Mandatory): Will samples be received in the state (soils must be received moisture conditioned)? Are there any special requirements or regulations (e.g. Waste Classification)? Matrix: W for Water, S for Soil. If no tests are listed, indicate the parameter listed above to be tested on that sample.

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Solid (S), Water (W), Leachate (L), Sludge (SL), Oil (O), Tissue (T), Air (A), Swab (SW), Other (OT)	PFAS: Full Suite (28 analytes)								Total (Y/N)	Lab (Y/N)	Additional Information (Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.)
1	0429_SS17_041009		9/10/2024	1	S	X								☐	☐	
2	0429_SS17_041009		9/10/2024	1	S	X								☐	☐	
3	0429_SW201_041009		9/10/2024	1	W	X										
4	0429_SW202_041009		9/10/2024	1	W	X										

Receipt Detail (Lab Use Only)	ON Ice / Cooling Method:	Yes / No	Ice Direct: Yes / No	Temp:	Sample Temperature on Receipt:	°C	°C	°C	Temp by Gun (Blank):	Yes / No	Temp by Gun (Sample):	°C	Yes / No	N/A (Water)	Cooler Seals Intact:	☐ Cooler Seals	☐ Client	Cooler Seals Comments:	Cooler Temperature (°C):	Hold Only	Room Only	Number of Coolers

Relinquished by:	[redacted]	Date / Time:		Received by:		Date / Time:	9/10/2024 17:00	Relinquished by:	[redacted]	Signature:	[redacted]	Date / Time:	9/10/24 5pm
Relinquished by:	[redacted]	Signature:	[redacted]	Received by:		Date / Time:	10/10/24	Received by:	[redacted]	Signature:		Date / Time:	10/10/24 0830

CERTIFICATE OF ANALYSIS

Work Order	: **EB2435708**	Page	: 1 of 7
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 17-Oct-2024 08:50
Order number	: PS129286	Date Analysis Commenced	: 18-Oct-2024
C-O-C number	: ----	Issue Date	: 25-Oct-2024 11:19
Sampler	: [redacted]		
Site	: Lavarack Barracks, Townsville		
Quote number	: EB23PARBRIQLD0014		
No. of samples received	: 10		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Acid Sulfate Soil Chemist	Brisbane Soil Preparation, Stafford, QLD
	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
	Senior Chemist - Organics	Brisbane Soil Preparation, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: The LOR for particular analytes have been raised due to matrix interference.
- EP231X PFAS: Particular samples showed matrix interference indicated by internal standard recovery less than 50%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- EP231X PFAS: High 10:2 FTS matrix spike recovery for sample '0229_SD245_241015' (EB2435708-002) deemed acceptable as all associated analyte results are less than LOR.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per USEPA 1633 limits where LISTED. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0229_SD244_241015	0229_SD245_241015	0229_SD227_241015	0229_QC103_241015	0229_QC203_241015
			Sampling date / time	15-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2435708-001	EB2435708-002	EB2435708-003	EB2435708-009	EB2435708-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**43.6**	**64.5**	**59.5**	**58.1**	**67.4**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	**0.0003**	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0005	<0.0020	<0.0002	<0.0023	<0.0031
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0010	**0.0009**	<0.0002	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	**0.0002**	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0229_SD244_241015	0229_SD245_241015	0229_SD227_241015	0229_QC103_241015	0229_QC203_241015
				Sampling date / time	15-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2435708-001	EB2435708-002	EB2435708-003	EB2435708-009	EB2435708-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0010	<0.0010
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0010	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0010	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	<0.0002	**0.0014**	<0.0002	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	**0.0009**	<0.0002	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	**0.0012**	<0.0002	<0.0002
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**101**	**83.0**	**98.5**	**88.0**	**78.5**
13C8-PFOA	----	0.0002	%		**100**	**111**	**107**	**98.0**	**124**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW244_241015	0229_SW245_241015	0229_SW227_241015	0229_QC103_241015	0229_QC203_241015
				Sampling date / time	15-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2435708-004	EB2435708-005	EB2435708-006	EB2435708-007	EB2435708-008
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.02**	<0.01	**0.02**	**0.03**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_SW244_241015	0229_SW245_241015	0229_SW227_241015	0229_QC103_241015	0229_QC203_241015
				Sampling date / time	15-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00	15-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2435708-004	EB2435708-005	EB2435708-006	EB2435708-007	EB2435708-008
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.02**	<0.01	**0.02**	**0.03**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.02**	<0.01	**0.02**	**0.03**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.02**	<0.01	**0.02**	**0.03**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**102**	**102**	**100**	**99.6**
13C8-PFOA	----	0.02	%		**100**	**102**	**102**	**104**	**105**

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2435708**	Page	: 1 of 7
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 17-Oct-2024
Order number	: PS129286	Date Analysis Commenced	: 18-Oct-2024
C-O-C number	: ----	Issue Date	: 25-Oct-2024
Sampler	: [redacted] [redacted]		
Site	: Lavarack Barracks, Townsville		
Quote number	: EB23PARBRIQLD0014		
No. of samples received	: 10		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Acid Sulfate Soil Chemist	Brisbane Soil Preparation, Stafford, QLD
[redacted]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
[redacted]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
[redacted]	Senior Chemist - Organics	Brisbane Soil Preparation, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6128287)									
EB2435688-001	Anonymous	EA055: Moisture Content	----	0.1	%	1.5	1.5	0.0	0% - 50%
EB2435708-001	0229_SD244_241015	EA055: Moisture Content	----	0.1	%	43.6	43.6	0.0	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6128144)									
EB2435708-001	0229_SD244_241015	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002 (0.0005)*	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6128144)									
EB2435708-001	0229_SD244_241015	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6128144) - continued									
EB2435708-001	0229_SD244_241015	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6128144)									
EB2435708-001	0229_SD244_241015	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6128144)									
EB2435708-001	0229_SD244_241015	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6128144)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	127	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	112	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	116	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	132	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	103	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	102	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6128144)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	125	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	120	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	126	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	112	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	121	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	124	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	125	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	120	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	131	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	130	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6128144)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	115	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	110	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	115	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	109	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	118	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	120	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6128144)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6128144) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	138	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	92.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	126	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	97.1	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6134787)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	101	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	98.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	104	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	118	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	88.1	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	89.6	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6134787)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	102	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	102	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	103	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	108	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	104	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	103	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	117	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	110	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6134787)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	97.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	116	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	94.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	99.5	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	101	62.6	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6134787) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	101	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	92.6	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6134787)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	114	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	108	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	101	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	130	64.2	133

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6128144)							
EB2435708-002	0229_SD245_241015	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	118	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	118	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	113	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	76.5	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	112	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	68.3	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6128144)							
EB2435708-002	0229_SD245_241015	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	122	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	125	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	124	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	112	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	123	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	118	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	122	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	116	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	118	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	116	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	131	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6128144)							
EB2435708-002	0229_SD245_241015	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	86.0	48.0	128

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6128144) - continued							
EB2435708-002	0229_SD245_241015	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	106	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	117	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	105	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	106	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	89.2	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6128144)							
EB2435708-002	0229_SD245_241015	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	143	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	110	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	129	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	# 150	54.8	124

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2435708**	Page	: 1 of 6
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 17-Oct-2024
Site	: Lavarack Barracks, Townsville	Issue Date	: 25-Oct-2024
Sampler	: [redacted]	No. of samples received	: 10
Order number	: PS129286	No. of samples analysed	: 10

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EB2435708--002	0229_SD245_241015	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	150 %	54.8-124%	**Recovery greater than upper data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	16	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	16	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)		***Sample Date***	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)								
HDPE Soil Jar (EA055)								
0229_SD244_241015, 0229_SD227_241015, 0229_QC203_241015	0229_SD245_241015, 0229_QC103_241015,	**15-Oct-2024**	**----**	----	----	**18-Oct-2024**	29-Oct-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X)								
0229_SD244_241015, 0229_SD227_241015, 0229_QC203_241015	0229_SD245_241015, 0229_QC103_241015,	**15-Oct-2024**	**18-Oct-2024**	13-Apr-2025	✓	**22-Oct-2024**	27-Nov-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X)								
0229_SD244_241015, 0229_SD227_241015, 0229_QC203_241015	0229_SD245_241015, 0229_QC103_241015,	**15-Oct-2024**	**18-Oct-2024**	13-Apr-2025	✓	**22-Oct-2024**	27-Nov-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
0229_SD244_241015, 0229_SD245_241015, 0229_SD227_241015, 0229_QC103_241015, 0229_QC203_241015	**15-Oct-2024**	**18-Oct-2024**	13-Apr-2025	✓	**22-Oct-2024**	27-Nov-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0229_SD244_241015, 0229_SD245_241015, 0229_SD227_241015, 0229_QC103_241015, 0229_QC203_241015	**15-Oct-2024**	**18-Oct-2024**	13-Apr-2025	✓	**22-Oct-2024**	27-Nov-2024	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
0229_SD244_241015, 0229_SD245_241015, 0229_SD227_241015, 0229_QC103_241015, 0229_QC203_241015	**15-Oct-2024**	**18-Oct-2024**	13-Apr-2025	✓	**22-Oct-2024**	27-Nov-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0229_SW244_241015, 0229_SW245_241015, 0229_SW227_241015, 0229_QC103_241015, 0229_QC203_241015	**15-Oct-2024**	**22-Oct-2024**	13-Apr-2025	✓	**23-Oct-2024**	13-Apr-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0229_SW244_241015, 0229_SW245_241015, 0229_SW227_241015, 0229_QC103_241015, 0229_QC203_241015	**15-Oct-2024**	**22-Oct-2024**	13-Apr-2025	✓	**23-Oct-2024**	13-Apr-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0229_SW244_241015, 0229_SW245_241015, 0229_SW227_241015, 0229_QC103_241015, 0229_QC203_241015	**15-Oct-2024**	**22-Oct-2024**	13-Apr-2025	✓	**23-Oct-2024**	13-Apr-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0229_SW244_241015, 0229_SW245_241015, 0229_SW227_241015, 0229_QC103_241015, 0229_QC203_241015	**15-Oct-2024**	**22-Oct-2024**	13-Apr-2025	✓	**23-Oct-2024**	13-Apr-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0229_SW244_241015, 0229_SW245_241015, 0229_SW227_241015, 0229_QC103_241015, 0229_QC203_241015	**15-Oct-2024**	**22-Oct-2024**	13-Apr-2025	✓	**23-Oct-2024**	13-Apr-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	16	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	16	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2435708**		
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: +61 7 3552 8616
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: QLD_0874_PFASMGMT_24	Page	: 1 of 3
Order number	: PS129286	Quote number	: EB2023PARBRIQLD0014 (EB23PARBRIQLD0014)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Lavarack Barracks, Townsville		
Sampler	: [redacted]		

Dates

Date Samples Received	: 17-Oct-2024 08:50	Issue Date	: 17-Oct-2024
Client Requested Due Date	: 24-Oct-2024	Scheduled Reporting Date	: **24-Oct-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 4.2; 5.7; 3.5°C - Ice present
Receipt Detail	: Hard Esky	No. of samples received / analysed	: 10 / 10

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***Samples were originally received by ALS Towsnville on 15/10/24, and forwarded to ALS Brisbane for analysis.**
- **Please note, where both water and soil were received with the same sample ID's, Soil samples for ALS ID#7 and #8 have been logged separately as ALS ID#9 and #10. For any further information regarding these adjustments please contact client services at** [redacted]
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (30 analytes)
EB2435708-001	15-Oct-2024 00:00	0229_SD244_241015	✓	✓
EB2435708-002	15-Oct-2024 00:00	0229_SD245_241015	✓	✓
EB2435708-003	15-Oct-2024 00:00	0229_SD227_241015	✓	✓
EB2435708-009	15-Oct-2024 00:00	0229_QC103_241015	✓	✓
EB2435708-010	15-Oct-2024 00:00	0229_QC203_241015	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (31 analytes)
EB2435708-004	15-Oct-2024 00:00	0229_SW244_241015	✓
EB2435708-005	15-Oct-2024 00:00	0229_SW245_241015	✓
EB2435708-006	15-Oct-2024 00:00	0229_SW227_241015	✓
EB2435708-007	15-Oct-2024 00:00	0229_QC103_241015	✓
EB2435708-008	15-Oct-2024 00:00	0229_QC203_241015	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ESDAT (ESDAT) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ESDAT (ESDAT) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ESDAT (ESDAT) Email [redacted]

[redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ESDAT (ESDAT) Email [redacted]

CHAIN OF CUSTODY

Page 1 of 1

Mandatory Fields

CLIENT CODE

*CLIENT: WSP Australia Pty Limited

*PROJECT MANAGER: [redacted]

*PM MOBILE:

SAMPLER: [redacted]

SAMPLER MOBILE:

OFFICE: Level 27, 680 George Street Sydney, 2000

ALS QUOTE #: EB21PVABRIOL000014 V2

PURCHASE ORDER: 15119286

PROJECT: GID 0874 PEASMEWT 24

SITE: Lavarack Barracks, Townsville

*INVOICE TO: [redacted]

Email PM

BIOSECURITY

*EMAIL REPORTS TO: [redacted]

*ANALYSIS REQUIRED

Environmental Division Brisbane

Work Order Reference

EB2435708

*STORAGE REQUIREMENTS

X Standard Storage

Extended Storage

Specify Disposal Date

*TURNAROUND

X 5 days (no surcharge)

3 day(+10%)

2 day(+25%)

1 day(+50%)

Comments

ALS Use Only Sub ID	Sample ID	Depth	Date/Time	No. Bottles	Matrix	PFAS - Full Suite (28 analytes)										Additional Information
1	[redacted]		15/10/2024	1	S	X										
2	[redacted]		15/10/2024	1	S	X										
3	[redacted]		15/10/2024	1	S	X										
4	[redacted]		15/10/2024	1	W	X										
5	[redacted]		15/10/2024	1	W	X										
6	[redacted]		15/10/2024	1	W	X										
7,8	[redacted]		15/10/2024	2	SW	X										
9,10	[redacted]		15/10/2024	2	SW	X										

Receipt Detail: No. Samples / Method / Preserved / Received / Yes / No

Sample Temperature on Receipt: °C °C °C

Security Seal Intact: Yes / No / N/A

Cooler On Ice: Cooler Short / Client

Cooler Ref #

Package Count: Hand Delivery / Post Delivery / Courier

Relinquished by: [redacted] Date/Time: 15/10/24 17:15

Received by: [redacted] Date/Time: 15/10/24

Relinquished by: [redacted] Date/Time: 17/10/24 0850

Received by: [redacted] Date/Time:

CERTIFICATE OF ANALYSIS

Work Order	: **EB2436463**	Page	: 1 of 23
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 22-Oct-2024 12:45
Order number	: PS129286	Date Analysis Commenced	: 24-Oct-2024
C-O-C number	: ----	Issue Date	: 31-Oct-2024 17:13
Sampler	: [redacted]		
Site	: Lavarack Barracks, Townsville		
Quote number	: EB23PARBRIQLD0014		
No. of samples received	: 54		
No. of samples analysed	: 50		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: Particular samples required dilution due to the presence of high-level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: Particular samples showed matrix interference indicated by internal standard recovery greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- EP231X PFAS: Whole bottle extraction was not possible for samples '0229_MW074_241016' (EB2436463-023) and '0229_MW349_241016' (EB2436463-026). Samples required dilutions prior to extraction due to matrix interference (sediment). LOR values have been adjusted accordingly.
- EP231X PFAS: The LOR for PFOS has been raised in sample '0229_MW019_241016' (EB2436463-003) due to matrix interference.
- EP231X PFAS: Particular samples showed matrix interference indicated by internal standard recovery less than 50%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- EP231X PFAS: The LOR of 6:2 FTS has been raised in sample 0229_QC102_241016 (EB2436463-045) due to matrix interference.
- EP231X PFAS: Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW021_241017	0229_MW018_241017	0229_MW019_241016	0229_MW112_241016	0229_MW114_241016
				Sampling date / time	17-Oct-2024 00:00	17-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-001	EB2436463-002	EB2436463-003	EB2436463-004	EB2436463-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.15**	**0.12**	**0.06**	**0.23**	**2.28**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.11**	**0.12**	**0.03**	**0.26**	**2.21**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.67**	**0.77**	**0.11**	**1.68**	**10.2**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.03**	**0.06**	<0.02	**0.04**	**0.51**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.87**	**1.71**	<0.02	**0.56**	**1.84**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	**0.6**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.04**	<0.02	**0.08**	**0.95**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.21**	<0.02	**0.36**	**5.43**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.03**	<0.02	**0.05**	**0.66**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.02**	**0.06**	<0.01	**0.06**	**1.18**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.09	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0229_MW021_241017	0229_MW018_241017	0229_MW019_241016	0229_MW112_241016	0229_MW114_241016
			Sampling date / time	17-Oct-2024 00:00	17-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2436463-001	EB2436463-002	EB2436463-003	EB2436463-004	EB2436463-005
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**1.85**	**3.12**	**0.20**	**3.32**	**25.9**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**1.54**	**2.48**	**0.11**	**2.24**	**12.0**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**1.71**	**2.94**	**0.17**	**3.02**	**23.1**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**101**	**105**	**102**	**105**	**94.1**
13C8-PFOA	----	0.02	%	**106**	**106**	**106**	**103**	**109**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW115_241016	0229_MW116_241016	0229_MW139_241016	0229_MW135_241016	0229_MW105_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-006	EB2436463-007	EB2436463-008	EB2436463-009	EB2436463-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.20**	**0.26**	**0.08**	**0.08**	**8.33**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.11**	**0.12**	**0.08**	**0.06**	**8.96**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.42**	**0.18**	**0.91**	**0.47**	**57.7**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.04**	**0.02**	**1.80**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.16**	**0.01**	**1.81**	**0.21**	**31.0**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	**1.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.05**	<0.02	<0.02	<0.02	**3.28**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.17**	**0.10**	**0.06**	<0.02	**18.3**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**1.56**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.03**	**0.01**	**3.13**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.27**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.12
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.12

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW115_241016	0229_MW116_241016	0229_MW139_241016	0229_MW135_241016	0229_MW105_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-006	EB2436463-007	EB2436463-008	EB2436463-009	EB2436463-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.12
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.12
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.12
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**0.32**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1.11**	**0.67**	**3.01**	**0.85**	**136**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.58**	**0.19**	**2.72**	**0.68**	**88.7**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.00**	**0.55**	**2.89**	**0.77**	**125**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.4**	**93.0**	**98.0**	**103**	**91.4**
13C8-PFOA	----	0.02	%		**107**	**106**	**107**	**104**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW128_241016	0229_MW345_241016	0229_MW131_241016	0229_MW102_241016	0229_MW065_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-011	EB2436463-012	EB2436463-013	EB2436463-014	EB2436463-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**5.70**	**1.48**	**3.15**	**0.13**	**0.66**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**5.14**	**1.36**	**2.74**	**0.07**	**0.82**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**42.5**	**8.88**	**16.4**	**0.38**	**11.6**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**1.84**	**0.46**	**0.94**	**0.02**	**0.42**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**36.1**	**6.25**	**24.5**	**0.39**	**10.2**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.05	<0.02	<0.05	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**1.8**	**0.2**	**0.8**	<0.1	**0.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**3.40**	**0.45**	**1.52**	<0.02	**0.38**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**13.6**	**2.34**	**7.46**	**0.05**	**2.73**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**1.12**	**0.27**	**1.17**	<0.02	**0.17**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**2.71**	**0.60**	**2.47**	**0.03**	**0.33**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.35**	**0.11**	<0.05	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.05	<0.02	<0.05	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.05	<0.02	<0.05	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.05	<0.02	<0.05	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.05	<0.02	<0.05	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.12	<0.06	<0.12	<0.05	<0.06
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.05	<0.02	<0.05	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.12	<0.06	<0.12	<0.05	<0.06

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW128_241016	0229_MW345_241016	0229_MW131_241016	0229_MW102_241016	0229_MW065_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-011	EB2436463-012	EB2436463-013	EB2436463-014	EB2436463-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.12	<0.06	<0.12	<0.05	<0.06
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.12	<0.06	<0.12	<0.05	<0.06
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.12	<0.06	<0.12	<0.05	<0.06
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.05	<0.02	<0.05	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.05	<0.02	<0.05	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	**0.51**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**114**	**22.4**	**61.7**	**1.07**	**27.5**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**78.6**	**15.1**	**40.9**	**0.77**	**21.8**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**107**	**20.5**	**58.0**	**0.98**	**26.3**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.6**	**94.9**	**98.4**	**107**	**104**
13C8-PFOA	----	0.02	%		**101**	**98.9**	**108**	**107**	**103**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	0229_MW120_241016	0229_MW121_241016	0229_MW122_241016	0229_MW123S_241016	0229_MW123I_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
					EB2436463-016	EB2436463-017	EB2436463-018	EB2436463-019	EB2436463-020
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	**0.21**	**0.16**	**1.34**	**0.19**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.09**	**0.14**	**0.91**	**0.14**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.02**	**0.64**	**1.05**	**5.62**	**0.47**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.08**	**0.62**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.07**	**0.04**	**2.78**	**3.80**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	**0.2**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.03**	**0.16**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.12**	**0.87**	**0.08**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**0.02**	**0.09**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.06**	**0.31**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW120_241016	0229_MW121_241016	0229_MW122_241016	0229_MW123S_241016	0229_MW123I_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-016	EB2436463-017	EB2436463-018	EB2436463-019	EB2436463-020
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.12**	**0.98**	**4.44**	**13.9**	**0.88**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.09**	**0.68**	**3.83**	**9.42**	**0.47**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.12**	**0.89**	**4.22**	**12.4**	**0.74**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**99.4**	**101**	**100**	**98.5**
13C8-PFOA	----	0.02	%		**105**	**96.7**	**96.0**	**97.7**	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW014A_241016	0229_MW072_241016	0229_MW074_241016	0229_MW077_241016	0229_MW106_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-021	EB2436463-022	EB2436463-023	EB2436463-024	EB2436463-025
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.11**	**4.83**	**5.59**	**0.11**	**0.03**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.05**	**4.38**	**6.23**	**0.05**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.35**	**26.8**	**37.8**	**0.31**	**0.07**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**1.15**	**2.64**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.26**	**29.6**	**47.5**	**0.66**	**0.07**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.05	<0.05	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.5**	**0.8**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**1.27**	**1.72**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.04**	**7.73**	**11.0**	**0.06**	**0.02**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.75**	**1.10**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.01**	**1.37**	**2.57**	**0.03**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.78**	**1.52**	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.05	<0.05	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.05	<0.05	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.05	<0.05	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.05	<0.05	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.12	<0.12	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.05	<0.05	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.12	<0.12	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW014A_241016	0229_MW072_241016	0229_MW074_241016	0229_MW077_241016	0229_MW106_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-021	EB2436463-022	EB2436463-023	EB2436463-024	EB2436463-025
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.12	<0.12	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.12	<0.12	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.12	<0.12	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.05	<0.05	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.05	<0.05	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	**0.11**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.82**	**79.2**	**118**	**1.22**	**0.19**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.61**	**56.4**	**85.3**	**0.97**	**0.14**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.77**	**72.8**	**108**	**1.17**	**0.19**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**96.1**	**95.8**	**102**	**100**
13C8-PFOA	----	0.02	%		**96.2**	**93.3**	**104**	**99.7**	**97.4**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW349_241016	0229_MW141_241016	0229_MW138_241016	0229_MW002_241016	0229_MW003_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-026	EB2436463-027	EB2436463-028	EB2436463-029	EB2436463-030
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**3.60**	**0.10**	**1.21**	**0.11**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**3.78**	**0.06**	**1.08**	**0.12**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**24.4**	**0.44**	**5.34**	**1.26**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**1.74**	**0.02**	**0.46**	**0.06**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**24.2**	**0.27**	**6.18**	**0.91**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.5**	<0.1	**0.2**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.18**	**0.03**	**0.37**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**7.53**	**0.16**	**2.24**	**0.02**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.77**	<0.02	**0.24**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**1.60**	**0.03**	**0.47**	**0.01**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.71**	<0.02	**0.06**	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW349_241016	0229_MW141_241016	0229_MW138_241016	0229_MW002_241016	0229_MW003_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-026	EB2436463-027	EB2436463-028	EB2436463-029	EB2436463-030
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**70.0**	**1.11**	**17.8**	**2.49**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**48.6**	**0.71**	**11.5**	**2.17**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**63.8**	**1.03**	**16.2**	**2.31**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**115**	**104**	**99.0**	**99.8**	**102**
13C8-PFOA	----	0.02	%		**97.3**	**94.0**	**95.0**	**96.9**	**95.9**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	0229_MW118_241016	0229_MW119_241016	0229_MW124_241016	0229_MW125I_241016	0229_MW125S_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
					EB2436463-031	EB2436463-032	EB2436463-033	EB2436463-034	EB2436463-035
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.07**	**0.41**	<0.02	**0.24**	**0.72**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.18**	**0.61**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.03**	**0.05**	<0.01	**1.06**	**4.05**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.04**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.04**	**0.02**	**0.01**	**0.05**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.1**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.20**	<0.02	**0.08**	**0.23**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.22**	<0.02	**0.51**	**1.81**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.14**	<0.02	**0.02**	**0.09**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.14**	<0.01	**0.02**	**0.11**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW118_241016	0229_MW119_241016	0229_MW124_241016	0229_MW125I_241016	0229_MW125S_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-031	EB2436463-032	EB2436463-033	EB2436463-034	EB2436463-035
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.10**	**1.30**	**0.02**	**2.12**	**7.71**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.03**	**0.09**	**0.02**	**1.07**	**4.10**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.10**	**1.30**	**0.02**	**1.94**	**7.06**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.7**	**97.9**	**99.8**	**104**	**104**
13C8-PFOA	----	0.02	%		**95.7**	**96.3**	**92.5**	**95.7**	**91.1**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	0229_MW205S_241016	0229_MW212_241016	0229_MW217_241016	0229_MW220S_241016	0229_MW232_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
					EB2436463-036	EB2436463-037	EB2436463-038	EB2436463-039	EB2436463-040
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.03**	**0.13**	**0.06**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.08**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.01**	<0.01	**0.01**	**0.32**	**0.07**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	<0.01	**0.01**	**0.02**	**0.11**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW205S_241016	0229_MW212_241016	0229_MW217_241016	0229_MW220S_241016	0229_MW232_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-036	EB2436463-037	EB2436463-038	EB2436463-039	EB2436463-040
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.03**	<0.01	**0.05**	**0.55**	**0.24**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.03**	<0.01	**0.02**	**0.34**	**0.18**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.03**	<0.01	**0.05**	**0.47**	**0.24**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**100**	**110**	**96.0**	**97.5**	**106**
13C8-PFOA	----	0.02	%		**98.4**	**96.7**	**89.5**	**97.5**	**95.1**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW233_241016	0229_MW236S_241016	0229_QC100_241016	0229_QC101_241016	0229_QC102_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-041	EB2436463-042	EB2436463-043	EB2436463-044	EB2436463-045
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.06**	**0.07**	<0.04	**6.86**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.02**	**0.05**	<0.02	**6.83**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**0.15**	**0.48**	**0.07**	**51.9**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.04	<0.02	**2.23**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.20**	**0.19**	**0.05**	**27.4**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<1.2
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**3.20**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	**19.6**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**1.80**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.04	<0.01	**3.10**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.35**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW233_241016	0229_MW236S_241016	0229_QC100_241016	0229_QC101_241016	0229_QC102_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-041	EB2436463-042	EB2436463-043	EB2436463-044	EB2436463-045
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.43**	**0.79**	**0.12**	**123**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.35**	**0.67**	**0.12**	**79.3**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.41**	**0.74**	**0.12**	**114**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**104**	**93.9**	**102**	**107**
13C8-PFOA	----	0.02	%		**93.8**	**93.5**	**94.5**	**87.8**	**97.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC103_241016	0229_QC104_241016	0229_QC300_241016	0229_QC304_241017	0229_QC500_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-046	EB2436463-047	EB2436463-048	EB2436463-052	EB2436463-053
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.04**	**0.07**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.04**	**0.02**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.06**	**0.01**	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_QC103_241016	0229_QC104_241016	0229_QC300_241016	0229_QC304_241017	0229_QC500_241016
				Sampling date / time	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00	16-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2436463-046	EB2436463-047	EB2436463-048	EB2436463-052	EB2436463-053
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.14**	**0.10**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.10**	**0.03**	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.14**	**0.10**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**99.0**	**105**	**102**	**105**
13C8-PFOA	----	0.02	%		**97.7**	**90.7**	**96.0**	**96.4**	**93.7**

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2436463**	Page	: 1 of 12
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 22-Oct-2024
Order number	: PS129286	Date Analysis Commenced	: 24-Oct-2024
C-O-C number	: ----	Issue Date	: 31-Oct-2024
Sampler	: [redacted] [redacted]		
Site	: Lavarack Barracks, Townsville		
Quote number	: EB23PARBRIQLD0014		
No. of samples received	: 54		
No. of samples analysed	: 50		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
[redacted]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6148106)									
EB2436463-021	0229_MW014A_241016	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.35	0.33	7.6	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.26	0.27	4.1	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.11	0.13	14.7	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.05	0.05	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6148109)									
EB2436463-041	0229_MW233_241016	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6150225)									
EB2436463-026	0229_MW349_241016	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.05)*	µg/L	24.4	21.2	14.1	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.05)*	µg/L	24.2	23.4	3.5	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02 (0.05)*	µg/L	3.60	3.43	4.6	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02 (0.05)*	µg/L	3.78	3.50	7.6	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02 (0.05)*	µg/L	1.74	1.63	6.2	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6150225) - continued									
EB2436463-038	0229_MW217_241016	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.01	0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.04	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6148106)									
EB2436463-021	0229_MW014A_241016	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6148109)									
EB2436463-041	0229_MW233_241016	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6150225)									
EB2436463-026	0229_MW349_241016	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.05)*	µg/L	1.60	1.82	12.7	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02 (0.05)*	µg/L	1.18	1.14	3.7	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02 (0.05)*	µg/L	7.53	7.63	1.4	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02 (0.05)*	µg/L	0.77	0.75	3.4	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02 (0.05)*	µg/L	0.71	0.75	5.5	0% - 50%
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6150225) - continued									
EB2436463-026	0229_MW349_241016	EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1 (0.2)*	µg/L	0.5	0.4	0.0	No Limit
EB2436463-038	0229_MW217_241016	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6148106)									
EB2436463-021	0229_MW014A_241016	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6148109)									
EB2436463-041	0229_MW233_241016	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6148109) - continued									
EB2436463-041	0229_MW233_241016	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6150225)									
EB2436463-026	0229_MW349_241016	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
EB2436463-038	0229_MW217_241016	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6148106)									
EB2436463-021	0229_MW014A_241016	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6148106) - continued									
EB2436463-021	0229_MW014A_241016	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6148109)									
EB2436463-041	0229_MW233_241016	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6150225)									
EB2436463-026	0229_MW349_241016	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2436463-038	0229_MW217_241016	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6148105)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	95.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	91.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	86.4	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	97.3	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	95.2	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.4	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6148106)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	92.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	80.1	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	70.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	83.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	80.0	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	86.3	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6148109)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	109	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	102	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	75.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	115	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	88.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	96.9	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6150225)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	87.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	82.5	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	76.9	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	102	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	85.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	85.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6148105)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	90.6	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	97.2	72.0	129

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6148105) - continued								
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	90.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	87.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	93.2	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	94.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	95.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	94.1	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6148106)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	82.8	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	87.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	73.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	75.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	96.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	87.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	82.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	77.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	95.6	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	109	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	86.5	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6148109)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	95.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	120	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	105	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	107	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	110	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	118	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	130	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	130	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6150225)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6150225) - continued								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	83.5	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	86.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	102	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	93.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	87.8	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	87.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	91.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	86.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	85.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	92.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	93.0	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6148105)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	91.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	95.8	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	85.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.2	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	90.2	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	103	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	97.2	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6148106)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	70.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	84.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	80.0	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	80.5	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	79.5	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	74.2	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	74.2	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6148109)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6148109) - continued								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	123	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	69.1	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	91.3	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	77.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	100	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	98.6	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	99.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6150225)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	99.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	111	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	77.4	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	81.5	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	79.7	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	93.6	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	84.4	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6148105)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	98.0	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	98.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	104	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	111	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6148106)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	67.0	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	100	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	92.7	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	79.7	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6148109)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	100	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	117	64.0	140

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6148109) - continued								
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	110	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	121	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6150225)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	70.0	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	98.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	69.4	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	84.8	64.2	133

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6150225)							
EB2436463-031	0229_MW118_241016	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	116	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	107	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	81.0	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	115	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	117	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	94.4	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6150225)							
EB2436463-031	0229_MW118_241016	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	87.0	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	102	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	129	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	102	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	104	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	112	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	110	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	112	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	105	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	122	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	95.9	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6150225)							
EB2436463-031	0229_MW118_241016	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	132	59.0	135

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6150225) - continued							
EB2436463-031	0229_MW118_241016	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	94.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	95.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	92.8	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	101	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	122	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	101	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6150225)							
EB2436463-031	0229_MW118_241016	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	115	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	128	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	119	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	123	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2436463**	Page	: 1 of 8
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 22-Oct-2024
Site	: Lavarack Barracks, Townsville	Issue Date	: 31-Oct-2024
Sampler	: [redacted]	No. of samples received	: 54
Order number	: PS129286	No. of samples analysed	: 50

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	68	5.88	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	68	1.47	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)		***Sample Date***	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0229_MW019_241016,	0229_MW112_241016,	**16-Oct-2024**	**28-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
0229_MW074_241016,	0229_MW077_241016,							
0229_MW106_241016,	0229_MW349_241016,							
0229_MW141_241016,	0229_MW138_241016,							
0229_MW002_241016,	0229_MW003_241016,							
0229_MW118_241016,	0229_MW119_241016,							
0229_MW124_241016,	0229_MW125I_241016,							
0229_MW125S_241016,	0229_MW205S_241016,							
0229_MW212_241016,	0229_MW217_241016,							
0229_MW220S_241016,	0229_MW232_241016,							
0229_MW233_241016,	0229_MW236S_241016,							
0229_QC100_241016,	0229_QC101_241016,							
0229_QC102_241016,	0229_QC103_241016,							
0229_QC104_241016,	0229_QC300_241016,							
0229_QC304_241017,	0229_QC500_241016							
HDPE (no PTFE) (EP231X)								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
0229_MW114_241016,	0229_MW115_241016,	**16-Oct-2024**	**29-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
0229_MW116_241016,	0229_MW139_241016,							
0229_MW135_241016,	0229_MW105_241016,							
0229_MW128_241016,	0229_MW345_241016,							
0229_MW131_241016,	0229_MW102_241016,							
0229_MW065_241016,	0229_MW120_241016,							
0229_MW121_241016,	0229_MW122_241016,							
0229_MW123S_241016,	0229_MW123I_241016,							
0229_MW014A_241016,	0229_MW072_241016							
HDPE (no PTFE) (EP231X)								
0229_MW021_241017,	0229_MW018_241017	**17-Oct-2024**	**28-Oct-2024**	15-Apr-2025	✓	**29-Oct-2024**	15-Apr-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0229_MW019_241016,	0229_MW112_241016,	**16-Oct-2024**	**28-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
0229_MW074_241016,	0229_MW077_241016,							
0229_MW106_241016,	0229_MW349_241016,							
0229_MW141_241016,	0229_MW138_241016,							
0229_MW002_241016,	0229_MW003_241016,							
0229_MW118_241016,	0229_MW119_241016,							
0229_MW124_241016,	0229_MW125I_241016,							
0229_MW125S_241016,	0229_MW205S_241016,							
0229_MW212_241016,	0229_MW217_241016,							
0229_MW220S_241016,	0229_MW232_241016,							
0229_MW233_241016,	0229_MW236S_241016,							
0229_QC100_241016,	0229_QC101_241016,							
0229_QC102_241016,	0229_QC103_241016,							
0229_QC104_241016,	0229_QC300_241016,							
0229_QC304_241017,	0229_QC500_241016							
HDPE (no PTFE) (EP231X)								
0229_MW114_241016,	0229_MW115_241016,	**16-Oct-2024**	**29-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
0229_MW116_241016,	0229_MW139_241016,							
0229_MW135_241016,	0229_MW105_241016,							
0229_MW128_241016,	0229_MW345_241016,							
0229_MW131_241016,	0229_MW102_241016,							
0229_MW065_241016,	0229_MW120_241016,							
0229_MW121_241016,	0229_MW122_241016,							
0229_MW123S_241016,	0229_MW123I_241016,							
0229_MW014A_241016,	0229_MW072_241016							
HDPE (no PTFE) (EP231X)								
0229_MW021_241017,	0229_MW018_241017	**17-Oct-2024**	**28-Oct-2024**	15-Apr-2025	✓	**29-Oct-2024**	15-Apr-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0229_MW019_241016,	0229_MW112_241016,	**16-Oct-2024**	**28-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
0229_MW074_241016,	0229_MW077_241016,							
0229_MW106_241016,	0229_MW349_241016,							
0229_MW141_241016,	0229_MW138_241016,							
0229_MW002_241016,	0229_MW003_241016,							
0229_MW118_241016,	0229_MW119_241016,							
0229_MW124_241016,	0229_MW125I_241016,							
0229_MW125S_241016,	0229_MW205S_241016,							
0229_MW212_241016,	0229_MW217_241016,							
0229_MW220S_241016,	0229_MW232_241016,							
0229_MW233_241016,	0229_MW236S_241016,							
0229_QC100_241016,	0229_QC101_241016,							
0229_QC102_241016,	0229_QC103_241016,							
0229_QC104_241016,	0229_QC300_241016,							
0229_QC304_241017,	0229_QC500_241016							
HDPE (no PTFE) (EP231X)								
0229_MW114_241016,	0229_MW115_241016,	**16-Oct-2024**	**29-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
0229_MW116_241016,	0229_MW139_241016,							
0229_MW135_241016,	0229_MW105_241016,							
0229_MW128_241016,	0229_MW345_241016,							
0229_MW131_241016,	0229_MW102_241016,							
0229_MW065_241016,	0229_MW120_241016,							
0229_MW121_241016,	0229_MW122_241016,							
0229_MW123S_241016,	0229_MW123I_241016,							
0229_MW014A_241016,	0229_MW072_241016							
HDPE (no PTFE) (EP231X)								
0229_MW021_241017,	0229_MW018_241017	**17-Oct-2024**	**28-Oct-2024**	15-Apr-2025	✓	**29-Oct-2024**	15-Apr-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0229_MW019_241016,	0229_MW112_241016,	**16-Oct-2024**	**28-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
0229_MW074_241016,	0229_MW077_241016,							
0229_MW106_241016,	0229_MW349_241016,							
0229_MW141_241016,	0229_MW138_241016,							
0229_MW002_241016,	0229_MW003_241016,							
0229_MW118_241016,	0229_MW119_241016,							
0229_MW124_241016,	0229_MW125I_241016,							
0229_MW125S_241016,	0229_MW205S_241016,							
0229_MW212_241016,	0229_MW217_241016,							
0229_MW220S_241016,	0229_MW232_241016,							
0229_MW233_241016,	0229_MW236S_241016,							
0229_QC100_241016,	0229_QC101_241016,							
0229_QC102_241016,	0229_QC103_241016,							
0229_QC104_241016,	0229_QC300_241016,							
0229_QC304_241017,	0229_QC500_241016							
HDPE (no PTFE) (EP231X)								
0229_MW114_241016,	0229_MW115_241016,	**16-Oct-2024**	**29-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
0229_MW116_241016,	0229_MW139_241016,							
0229_MW135_241016,	0229_MW105_241016,							
0229_MW128_241016,	0229_MW345_241016,							
0229_MW131_241016,	0229_MW102_241016,							
0229_MW065_241016,	0229_MW120_241016,							
0229_MW121_241016,	0229_MW122_241016,							
0229_MW123S_241016,	0229_MW123I_241016,							
0229_MW014A_241016,	0229_MW072_241016							
HDPE (no PTFE) (EP231X)								
0229_MW021_241017,	0229_MW018_241017	**17-Oct-2024**	**28-Oct-2024**	15-Apr-2025	✓	**29-Oct-2024**	15-Apr-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0229_MW019_241016,	0229_MW112_241016,	**16-Oct-2024**	**28-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
0229_MW074_241016,	0229_MW077_241016,							
0229_MW106_241016,	0229_MW349_241016,							
0229_MW141_241016,	0229_MW138_241016,							
0229_MW002_241016,	0229_MW003_241016,							
0229_MW118_241016,	0229_MW119_241016,							
0229_MW124_241016,	0229_MW125I_241016,							
0229_MW125S_241016,	0229_MW205S_241016,							
0229_MW212_241016,	0229_MW217_241016,							
0229_MW220S_241016,	0229_MW232_241016,							
0229_MW233_241016,	0229_MW236S_241016,							
0229_QC100_241016,	0229_QC101_241016,							
0229_QC102_241016,	0229_QC103_241016,							
0229_QC104_241016,	0229_QC300_241016,							
0229_QC304_241017,	0229_QC500_241016							
HDPE (no PTFE) (EP231X)								
0229_MW114_241016,	0229_MW115_241016,	**16-Oct-2024**	**29-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
0229_MW116_241016,	0229_MW139_241016,							
0229_MW135_241016,	0229_MW105_241016,							
0229_MW128_241016,	0229_MW345_241016,							
0229_MW131_241016,	0229_MW102_241016,							
0229_MW065_241016,	0229_MW120_241016,							
0229_MW121_241016,	0229_MW122_241016,							
0229_MW123S_241016,	0229_MW123I_241016,							
0229_MW014A_241016,	0229_MW072_241016							
HDPE (no PTFE) (EP231X)								
0229_MW021_241017,	0229_MW018_241017	**17-Oct-2024**	**28-Oct-2024**	15-Apr-2025	✓	**29-Oct-2024**	15-Apr-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	68	**5.88**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	68	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	68	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	68	**1.47**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2436463**

Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: +61 7 3552 8616
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: QLD_0874_PFASMGMT_24	Page	: 1 of 4
Order number	: PS129286	Quote number	: EB2023PARBRIQLD0014 (EB23PARBRIQLD0014)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Lavarack Barracks, Townsville		
Sampler	: [redacted]		

Dates

Date Samples Received	: 22-Oct-2024 12:45	Issue Date	: 23-Oct-2024
Client Requested Due Date	: 30-Oct-2024	Scheduled Reporting Date	: **30-Oct-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 16	Temperature	: 0.6°C, 1.2°C, 1.8°C - Ice present
Receipt Detail	: HARD EKIES AND FOAM ESKIES	No. of samples received / analysed	: 54 / 50

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Sample “0229_QC200_241016”, “0229_QC201_241016”, “0229_QC202_241016”, “0229_QC203_241016” and “0229_QC204_241016” has been forwarded to EUROFINS , as requested. Please note that this will incur a freight forwarding fee.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (31 analytes)
EB2436463-001	17-Oct-2024 00:00	0229_MW021_241017		✓
EB2436463-002	17-Oct-2024 00:00	0229_MW018_241017		✓
EB2436463-003	16-Oct-2024 00:00	0229_MW019_241016		✓
EB2436463-004	16-Oct-2024 00:00	0229_MW112_241016		✓
EB2436463-005	16-Oct-2024 00:00	0229_MW114_241016		✓
EB2436463-006	16-Oct-2024 00:00	0229_MW115_241016		✓
EB2436463-007	16-Oct-2024 00:00	0229_MW116_241016		✓
EB2436463-008	16-Oct-2024 00:00	0229_MW139_241016		✓
EB2436463-009	16-Oct-2024 00:00	0229_MW135_241016		✓
EB2436463-010	16-Oct-2024 00:00	0229_MW105_241016		✓
EB2436463-011	16-Oct-2024 00:00	0229_MW128_241016		✓
EB2436463-012	16-Oct-2024 00:00	0229_MW345_241016		✓
EB2436463-013	16-Oct-2024 00:00	0229_MW131_241016		✓
EB2436463-014	16-Oct-2024 00:00	0229_MW102_241016		✓
EB2436463-015	16-Oct-2024 00:00	0229_MW065_241016		✓
EB2436463-016	16-Oct-2024 00:00	0229_MW120_241016		✓
EB2436463-017	16-Oct-2024 00:00	0229_MW121_241016		✓
EB2436463-018	16-Oct-2024 00:00	0229_MW122_241016		✓
EB2436463-019	16-Oct-2024 00:00	0229_MW123S_241016		✓
EB2436463-020	16-Oct-2024 00:00	0229_MW123I_241016		✓
EB2436463-021	16-Oct-2024 00:00	0229_MW014A_241016		✓
EB2436463-022	16-Oct-2024 00:00	0229_MW072_241016		✓
EB2436463-023	16-Oct-2024 00:00	0229_MW074_241016		✓
EB2436463-024	16-Oct-2024 00:00	0229_MW077_241016		✓
EB2436463-025	16-Oct-2024 00:00	0229_MW106_241016		✓
EB2436463-026	16-Oct-2024 00:00	0229_MW349_241016		✓
EB2436463-027	16-Oct-2024 00:00	0229_MW141_241016		✓
EB2436463-028	16-Oct-2024 00:00	0229_MW138_241016		✓
EB2436463-029	16-Oct-2024 00:00	0229_MW002_241016		✓
EB2436463-030	16-Oct-2024 00:00	0229_MW003_241016		✓
EB2436463-031	16-Oct-2024 00:00	0229_MW118_241016		✓
EB2436463-032	16-Oct-2024 00:00	0229_MW119_241016		✓
EB2436463-033	16-Oct-2024 00:00	0229_MW124_241016		✓
EB2436463-034	16-Oct-2024 00:00	0229_MW125I_241016		✓
EB2436463-035	16-Oct-2024 00:00	0229_MW125S_241016		✓

			(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (31 analytes)
EB2436463-036	16-Oct-2024 00:00	0229_MW205S_241016		✓
EB2436463-037	16-Oct-2024 00:00	0229_MW212_241016		✓
EB2436463-038	16-Oct-2024 00:00	0229_MW217_241016		✓
EB2436463-039	16-Oct-2024 00:00	0229_MW220S_241016		✓
EB2436463-040	16-Oct-2024 00:00	0229_MW232_241016		✓
EB2436463-041	16-Oct-2024 00:00	0229_MW233_241016		✓
EB2436463-042	16-Oct-2024 00:00	0229_MW236S_241016		✓
EB2436463-043	16-Oct-2024 00:00	0229_QC100_241016		✓
EB2436463-044	16-Oct-2024 00:00	0229_QC101_241016		✓
EB2436463-045	16-Oct-2024 00:00	0229_QC102_241016		✓
EB2436463-046	16-Oct-2024 00:00	0229_QC103_241016		✓
EB2436463-047	16-Oct-2024 00:00	0229_QC104_241016		✓
EB2436463-048	16-Oct-2024 00:00	0229_QC300_241016		✓
EB2436463-049	16-Oct-2024 00:00	0229_QC301_241016	✓	
EB2436463-050	16-Oct-2024 00:00	0229_QC302_241016	✓	
EB2436463-051	16-Oct-2024 00:00	0229_QC303_241016	✓	
EB2436463-052	16-Oct-2024 00:00	0229_QC304_241017		✓
EB2436463-053	16-Oct-2024 00:00	0229_QC500_241016		✓
EB2436463-054	16-Oct-2024 00:00	0229_MW077A_241016	✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

[redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

Mandatory Fields

CHAIN OF CUSTODY

Page 1 of 6

ORIGIN CODE:	*PROJECT MANAGER: [redacted]	SAMPLER:	
*CLIENT: WSP Australia Pty Limited	*PM MOBILE:	SAMPLER MOBILE: [redacted]	
OFFICE: Originating Office: Level 27, 680 George Street Sydney, 2000	A.S CENTRE: (if not in Client) 6933PARRFIQL0004 V3	*PURCHASE ORDER/AFE: PS124286	
PROJECT NO./PROJECT: BID_087A PFASMGMT 24		SITE: Lavarack Barracks, Townsville	
*INVOICE TO: (if different to left)	dlindbergh@wsp.com; andrew.whelliway@wsp.com	CC Invoice to PM	
*EMAIL REPORTS TO: (if different to left)	phoenix.nicholl_fabrizio@wsp.com; deepblue.perth@wsp.com; [redacted]		

COC SECURITY:

County of Origin: Environmental Division Brisbane

Work Order Reference: EB2436463

*STORAGE REQUIREMENTS: Please select one. Standard Storage (Standard Storage time is for non-volatile samples. Volatile & perishable samples may require special handling.) — X Standard Storage; — Overnight storage. Specify Disposal Date: (Note: Extended storage times are for non-volatile samples and may incur storage fees.)

*TURNAROUND: Please select one. X 5 day(s) (no surcharge); ☐ 3 day(s) (+15%); ☐ 2 day(s) (+33%); ☐ 1 day(s) (+50%)

We will try to meet the requested turnaround time. Please contact the lab for more information.

*ANALYSIS REQUIRED: Please Specify Analysis Suite/Codes to be Undertaken (Please refer to Analysis Suite Table for more information). Where Analysis is to be undertaken on a Composite Sample, please indicate this in the Sample ID. Mark an 'X' in the boxes below to indicate the particular analysis required for each sample.

Comments:

Analysis Only	Sample ID	Depth	Date/Time	Matrix (Soil/Water/Other)	PFAS - Full Suite (28 analytes)	Lab ID (Laboratory Use Only)	
Lab ID						DUP	MS
1	0269_MW01_241003		10/10/2023	W	X	☐	☐
2	0269_MW08_241003		10/10/2023	W	X	☐	☐
3	0291_MW10_241006		16/10/2023	W	X		
4	0269_MW17_241004		16/10/2023	W	X		
5	0269_MW18_241006		16/10/2023	W	X		
6	0269_MW19_241006		16/10/2023	W	X		
7	0269_MW20_241006		16/10/2023	W	X		
8	0269_MW09_241006		16/10/2023	W	X		
9	0269_MW03_241006		16/10/2023	W	X		
10	0269_MW05_241006		16/10/2023	W	X		

Analysis Suite Information (Comments on Laboratory Analysis Suite)

Analysis Result Required	Turn Around Time	Due Date	Sample Temperature	Security Seal Intact	Yes / No / Not Required	Courier Details	Transmitted	Client
Standard / Priority / Other	Standard / Priority / Other							

Report Quote Number: | Invoice Number: | Purchase Order: | Number of Containers: 5 | Number of Coolers: 1

Relinquished by	Date / Time	Signature	Date / Time	Received by	Signature	Date / Time
				[redacted]	[redacted]	12:45 22/10/23
Relinquished by		Signature	Date / Time	Received by		Date / Time

Mandatory Fields

CHAIN OF CUSTODY

*CLIENT:	WSP Australia Pty Limited	*PROJECT MANAGER:	[redacted]
OFFICE:	Level 27, 680 George Street Sydney, 2000	*PM MOBILE:	
PROJECT ID:		ALS QUOTE No.:	Ea23PARBRISQD0014 V1
		SAMPLER NAME:	[redacted]
		PURCHASE ORDER NO.:	PS129206
		SITE:	Lavarack Barracks, Townsville

*INVOICE TO: dillon.hart@wsp.com; andrew.hall-swan@wsp.com

COC emailed to ALS: ☐

*REPORT TO: phil.wright@wsp.com; dillon.hart@wsp.com; andrew.hall-swan@wsp.com

*STORAGE REQUIREMENTS: ☒ Standard Storage ☐ Extended Storage ☐ Security Disposal Date:

*TURNAROUND: ☒ 5+ days (Standard) ☐ 3 day (+15%) ☐ 2 day (+30%) ☐ 1 day (+50%)

*ANALYSIS REQUIRED

Counter of Origin: (Signature)

WO Sticker to go here (ALS use only)

ALS Lab ID	Sample ID	Depth	Date/Time	No. Bottles	Matrix: Soil/Solid (S) or Water (W)	PFAS: Full Suite (36 analytes)
	0229_MW036_261016		16/10/2023		W	X
	0229_MW045_261016		16/10/2023		W	X
	0229_MW031_261016		16/10/2023		W	X
	0229_MW032_261016		16/10/2023		W	X
	0229_MW069_261016		16/10/2023		W	X
	0229_MW020_261016		16/10/2023		W	X
	0229_MW021_261016		16/10/2023		W	X
	0229_MW022_261016		16/10/2023		W	X
	0229_MW035_261016		16/10/2023		W	X
	0229_MW034_261016		16/10/2023		W	X

Lab Use (ALS use only): Exp ☐ ALS ☐ | Exp ☐ ALS ☐

Additional Information (Comments, Special Handling, Storage Requirements):

Receipt Detail (ALS use only): Cooling Method: | No. of Containers: | Condition: Frozen / Chilled / Ambient | Seal Intact: Yes / No / N/A

Sample Temperature on Receipt: °C °C

Custody Seal Intact (if used): Yes / No / N/A

Cooler Temp: Esky/Cooler Box ☐ Other ☐

Package No. (Courier): Hand Delivery | From Esky | Post/Air/Other

Courier: # # #

Relinquished by: Signature: Date/Time:

Received by: Signature: Date/Time:

Relinquished by: Signature: Date/Time:

Received by: Signature: Date/Time:

Mandatory Fields

CHAIN OF CUSTODY

Page 3 of 6

CLIENT:	WSP Australia Pty Limited	PROJECT MANAGER:	[redacted]	SAMPLER:	[redacted]
OFFICE:	Level 27, 680 George Street Sydney, 2000	PM MOBILE:		SAMPLER MOBILE:	
PROJECT:		ALS QUOTE #:	CQSDPARBNIOL0001462	TURNAROUND REQUIREMENTS:	STD 2 WEEK
ORDER NUMBER:		CLD_0874_PFAS&MGMT_24		SITE:	Lavarack Barracks, Townsville
INVOICE TO:			#ilml.kapral@wsp.com #robbie.hollway@wsp.com		☐ Email invoice to AM
EMAIL REPORTS TO:		#au_aecal_Sydney@wsp.com #ilml.kapral@wsp.com #Tim.Church@wsp.com #robbie.hollway@wsp.com			

STORAGE REQUIREMENTS — Please check box

- ☒ Standard Storage
- ☐ Extended Storage — Specify (Optional) Date:

Standard Storage (1 month unless otherwise specified)
Extended Storage (3 months unless otherwise specified)
Note: Extended storage may incur additional charges

TURNAROUND — Please circle bar

- ☒ Standard turnaround (7 days)
- ☐ 3 days (+15%)
- ☐ 2 days (+20%)
- ☐ 1 day (+35%)

(Urgent turnarounds are to be confirmed, please check Specific Requirements for more information)

ANALYSIS REQUIRED

List ALS codes for analytes required (e.g. PAH/Phenols/Soil Metals). Indicate filtered (F), preserved (P) or filtered and preserved (F/P) below. Please mark in the boxes below to indicate the particular bottle(s) to be used for each test. Where no preservation is indicated, natural will be assumed.

Comments

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	Matrix: (Soil, Water, Air, Dust, Other)	PFAS_Full Suite (28 analytes)	
5 1	0229_WW01m_241016		16/10/2025		W	X	
5 2	0228_WW02_241016		16/10/2025		W	X	
5 3	0229_WW04_241016		16/10/2025		W	X	
5 4	0229_WW07_241016		16/10/2025		W	X	
5 5	0228_WW05_241016		16/10/2025		W	X	
5 6	0229_WW06_241016		16/10/2025		W	X	
5 7	0229_WW01_241016		16/10/2025		W	X	
5 8	0229_WW09_241016		16/10/2025		W	X	
5 9	0229_WW08_241016		16/10/2025		W	X	
5 10	0229_WW08_241016		16/10/2025		W	X	

Receipt Detail (Courier Name)	Cooling Method	Ice / Blue Ice	Sample Temp on Receipt	°C	°C	°C	Security Seal Intact (Yes)	Yes / No / N/A (circle)

Courier Details: ☐ Courier Co ☐ Client (Courier Name)

Comments

Relinquished By	Date/Time	Signature	Date/Time	Received By	Signature	Date/Time
Relinquished By		Signature	Date/Time	Received By	Signature	Date/Time

WO Ticket # to go here (ALS use only)

COC Number

Quote Number

Client Reference

Courier of Origin (if not Australia)

Mode of Delivery

Receiving Laboratory

Temperature on Receipt (°C)

Free Ice

Cooling Method

Security Seal Intact

Custody Seals Intact (if used)

SDG	
Yes	No
☐	☐

Additional Information (Comments on condition of samples, additional tests required, etc.)

Page 1 of 1

Report Date: 1 October 2025

Mandatory Fields

CHAIN OF CUSTODY

CLIENT CODE:

*CLIENT: WSP Australia Pty Limited

OFFICE: Level 27, 680 George Street Sydney, 2000

*PROJECT MANAGER: [redacted]

*PWA MOBILE:

ALS QUOTE # (Consult ALS): pp23FARRGOLD0014V2

SAMPLER: [redacted]

SAMPLER MOBILE:

PURCHASE ORDER NO: PS129866

PROJECT NO (PROJECT): a.b_0874_PFASAMGAVT_24

SITE: Lovarock Barracks, Townsville

*INVOICE TO (if different): a[illegible].hearth@wsp.com; andrew.holloway@wsp.com

QC Level required by:

BIOSECURITY

*EMAIL REPORTS TO: a[illegible].hearth@wsp.com; [illegible]; [illegible]; andrew.holloway@wsp.com

*ANALYSIS REQUIRED

Country of Origin (if known)

AVO Sticker to go here. (ALS use only)

*STORAGE REQUIREMENT: Please Select — Standard Storage: X; Extended Storage: ☐ Specify Disposal Date:

*TURNAROUND: Please select — X 5+ days (Standard); ☐ 3 day (+50%); ☐ 2 day (+50%); ☐ 1 day (+100%)

Comments:

ALS Use only: Lab ID	Sample ID	Depth	Date/Time	Matrix	PFAS - Full Suite [28 analytes]	Lab to advise if Sample Submitted Exceeds Holding Time	Additional Information (Comments, Relinquishing Instructions etc)
1	0215_MW218_240516		15/10/2023	W	X		
2	0217_MW219_240515		15/10/2023	W	X		
3	0218_MW220_240515		15/10/2023	W	X		
4	0219_MW221_240514		14/10/2023	W	X		
5	0220_MW222_240516		16/10/2023	W	X		
6	0221_MW223_240516		16/10/2023	W	X		
7	0222_MW224_240516		16/10/2023	W	X		
8	0223_MW225_240515		15/10/2023	W	X		
9	0224_MW226_240515		15/10/2023	W	X		
10	0225_MW227_240515		15/10/2023	W	X		

Lab use only: Lab to advise if Sample Submitted Exceeds Holding Time: Yes / No

Sample Receipt Details: ☐ Cooler Present ☐ Chilled

Sampler Details: Name / Date / Signature

Container Type: Bottle / Vial; Preservative: Plastic / Glass; Size: 250mL / 500mL / 1L; Quantity: 1 / 2 / 3; Date Bottles Prepared: 4 / 8 / 9; Date/Bags Ordered: 4 / 8 / 9

Shipping Date: Ship Via: Airbill / Manifest; Sample Temperature Received: °C °C °C

Relinquished by: Date/Time: 16/10/2023 15:00

Received by: Date/Time:

Relinquished by: Date/Time:

Received by: Date/Time:

Version 4.0 [illegible]

Issued Date: 17/11/2016

Mandatory Fields

CHAIN OF CUSTODY

Page 5 of 6

CoC Number

CLIENT CODE

*PROJECT MANAGER: [redacted]

SAMPLER: [redacted]

CLIENT: WSP Australia Pty Limited

*PM MOBILE:

SAMPLER MOBILE:

OFFICE (Invoicing Office): Level 27, 680 George Street, Sydney, 2000

ALS QUOTE # (Quote Number): ES2324976RIGLD0014 V2

PURCHASE ORDER NO.: Pa1232886

PROJECT NAME/NUMBER: QLD_0674_PFAS MGMT_24

SITE: Lavarack Barracks Townsville

*INVOICE TO (if different to above): ellen.hamilton@wsp.com, andrew.holburn@wsp.com

QC Level: NEPM 2013 B3 and ALS QC Standard

*EMAIL REPORTS TO (will also be emailed to the above contact): glenn.grosser@wsp.com, deepti.bhupendra@wsp.com, ellen.hamilton@wsp.com, andrew.holburn@wsp.com

BIOSECURITY

Country of Origin of Sample: Where Australia?

*ANALYSIS REQUIRED: Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F,P) below. Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required). Refer to ALS Price List to determine appropriate sample containers and preservation.

*STORAGE REQUIREMENTS (Frozen (ice) on arrival / Ambient / Chilled / Specify Other): X Standard Storage; ☐ Extended Storage. Specify Extended Storage: Water samples are required to be stored under ambient conditions unless otherwise agreed with the laboratory.

*TURNAROUND (Refer to price list for options. Standard TAT may not be applicable for all analytes. Contact ALS Service Centre for more information): X 5 day (no surcharge); ☐ 3 day (~15%); ☐ 2 day (~25%); ☐ 1 day (~50%)

WO Sticker to go here. (ALS Use Only)

Comments

ALS Use Only: Lab ID	Sample ID	Depth	Date/Time	No. Bottles	Matrix (SOIL, WATER, Leachate, Groundwater, Surface Water, Sediment, Dust, Soil Gas, Biota, Paint, Wipe)	PFAS - Full Suite (28 analytes)	All QC samples (Duplicate, Triplicate, Rinsate, Blank, Trip Spike, Trip Blank, MS/MSD) Dup	MS	Additional comments (Dilutions required, high/low concentration samples, reduced sample volumes)
1	0330_WW01_240816		16/10/2023		W	X	☐	☐	
							☐	☐	
	0329_MW1555_240816		16/10/2023		W	X			
	0329_QC100_240816		16/10/2023		W	X			
	0329_QC400_240816		16/10/2023		W	X			Please send to Eurofins
	0329_QC101_240816		16/10/2023		W	X			
	0329_QC201_240816		16/10/2023		W	X			Please send to Eurofins
	0329_QC102_240816		16/10/2023		W	X			
	0329_QC202_240816		16/10/2023		W	X			Please send to Eurofins
	0329_QC103_240816		16/10/2023		W	X			

Receipt Detail (ALS Use Only): Cooling Method: Ice; Packing: Primary / Secondary; Temperature: Sample Receipt °C

Security Seal Intact (circle): Yes / No / N/A

Cooler Temp: ☐ Ice-Pack ☐ Other

Turnaround (Circle): Same Day / Next Day / 2 Day / 3 Day / Standard

Relinquished by: Date/Time: 16/10/2023 15:00 Received by: Date/Time:

Relinquished by: Date/Time: Received by: Date/Time:

Mandatory Fields

CHAIN OF CUSTODY

CLIENT:		*PROJECT MANAGER:	[redacted]	SAMPLER:	[redacted]
*CLIENT:	WSP Australia Pty Limited	*PM MOBILE:		EMAIL:	
OFFICE (Invoice Office):	Level 27, 680 George Street Sydney 2000	ALS QUOTE NO. (Quote Reference):	EB23PARRIQL0001412	PURCHASE ORDER NO.:	PS129286
PROJECT NO. / PROJECT:		DoD_0674_PFASMSMT_24		SITE:	Lavarack Barracks, Townsville
*INVOICE TO (complete all):		ali.m.hersi@wsp.com andrew.holloway@wsp.com		CC Invoice to PM:	
*EMAIL REPORTS TO (default to PM if blank):		gillian.wood_bowyer@wsp.com douglas.pepper@wsp.com.au dijon.hepburn@wsp.com michael.hersi@wsp.com			

BIOSECURITY

Country of Origin: (For Australia or)

PO Number to go here. (ALS use only)

*ANALYSIS REQUIRED

Will ALS Contact you for analysis after sample receipt if additional time is required? Yes / No (Select one)
Mark with an "X" in the boxes below to indicate the particular tests you require to be carried out for each sample.

STORAGE REQUIREMENTS (Select one box)

- [X] Standard Storage
- [ ] Extended Storage

Specify Required Dates:

*Note: Extended storage beyond the standard may require a separate agreement

TURNAROUND (Business days)

- [X] 10 days (no surcharge)
- [ ] 5 days (+15%)
- [ ] 2 days (+50%)
- [ ] 1 day (+100%)

(Urgent TAT requests may require additional charges and should be discussed with the laboratory in advance)

Comments:

| ALS use Only: ALS ID | Sample ID | Depth | Date/Time | Matrix | No. Bottles | PFAS - Full Suite (28 analytes) | | | | |

CERTIFICATE OF ANALYSIS

Work Order	: **EB2436460**	Page	: 1 of 5
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 22-Oct-2024 12:45
Order number	: PS129286	Date Analysis Commenced	: 24-Oct-2024
C-O-C number	: ----	Issue Date	: 31-Oct-2024 10:18
Sampler	: [redacted]		
Site	: Lavarack Barracks, Townsville		
Quote number	: EB23PARBRIQLD0014		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW226_241016	----	----	----	----
				Sampling date / time	16-Oct-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2436460-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.14**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.05**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.12**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0229_MW226_241016	----	----	----	----
				Sampling date / time	16-Oct-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2436460-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.33**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.14**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.28**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**107**	----	----	----	----
13C8-PFOA	----	0.02	%		**109**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2436460**	Page	: 1 of 4
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 22-Oct-2024
Order number	: PS129286	Date Analysis Commenced	: 24-Oct-2024
C-O-C number	: ----	Issue Date	: 31-Oct-2024
Sampler	: [redacted]		
Site	: Lavarack Barracks, Townsville		
Quote number	: EB23PARBRIQLD0014		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6148105)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	95.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	91.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	86.4	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	97.3	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	95.2	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.4	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6148105)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	90.6	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	97.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	90.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	87.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	93.2	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	94.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	95.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	94.1	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6148105)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	91.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	95.8	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	85.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.2	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	90.2	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	103	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	97.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6148105)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6148105) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	98.0	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	98.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	104	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	111	64.2	133

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2436460**	Page	: 1 of 4
Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: +61 7 3552 8616
Project	: QLD_0874_PFASMGMT_24	Date Samples Received	: 22-Oct-2024
Site	: Lavarack Barracks, Townsville	Issue Date	: 31-Oct-2024
Sampler	: [redacted]	No. of samples received	: 1
Order number	: PS129286	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	18	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	18	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	Due for extraction	Evaluation	*Date analysed*	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0229_MW226_241016	**16-Oct-2024**	**28-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0229_MW226_241016	**16-Oct-2024**	**28-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0229_MW226_241016	**16-Oct-2024**	**28-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0229_MW226_241016	**16-Oct-2024**	**28-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0229_MW226_241016	**16-Oct-2024**	**28-Oct-2024**	14-Apr-2025	✓	**29-Oct-2024**	14-Apr-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	18	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	18	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2436460**

Client	: **WSP AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 5394 SYDNEY NSW 2001	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: +61 7 3552 8616
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: QLD_0874_PFASMGMT_24	Page	: 1 of 3
Order number	: PS129286	Quote number	: EB2023PARBRIQLD0014 (EB23PARBRIQLD0014)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Lavarack Barracks, Townsville		
Sampler	: [redacted]		

Dates

Date Samples Received	: 22-Oct-2024 12:45	Issue Date	: 23-Oct-2024
Client Requested Due Date	: 30-Oct-2024	Scheduled Reporting Date	: **30-Oct-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 16	Temperature	: 0.6°C, 1.2°C, 1.8°C - Ice present
Receipt Detail	: HARD ESKIES AND FOAM ESKIES	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***Samples were originally received by ALS TOWNSVILLE on 21/10/2024, and forwarded to ALS Brisbane for analysis.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (31 analytes)
EB2436460-001	16-Oct-2024 00:00	0229_MW226_241016	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

[redacted]
- A4 - AU Tax Invoice (INV) Email [redacted]

[redacted]
- *AU Certificate of Analysis - NATA (COA) Email [redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email [redacted]
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email [redacted]
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email [redacted]
- Chain of Custody (CoC) (COC) Email [redacted]
- EDI Format - ENMRG (ENMRG) Email [redacted]
- EDI Format - XTab (XTAB) Email [redacted]

Mandatory Fields

CHAIN OF CUSTODY

Page 1 of 1

CLIENT CODE

*PROJECT MANAGER: [redacted]

SAMPLER:

*CLIENT: WSP Australia Pty Limited

*PM MOBILE

AMPTP MOBILE

OFFICE (Analysis Only): Level 27, 680 George Street Sydney, 2000

ALS QUOTE # (Client To Advise)

EB2436460 V2

PURCHASE ORDER NO.

PS125486

PROJECT NO. / PROJECT

CED_0876_PEASMONT_2A

SITE: Lavarack Barracks, Townsville

*INVOICE TO (Client to Advise)

dl[redacted]ml.hepth@wsp.com
andrew.n[redacted]@wsp.com

CC Invoice to PM

SYD SECURITY

*Email REPORTS TO (Client to Advise)

[redacted]@wsp.com
[redacted]@wsp.com.au
[redacted]@wsp.com
[redacted]@wsp.com

*ANALYSES REQUIRED

Country of Origin:

Environmental Division Brisbane

Work Order Reference EB2436460

*STORAGE REQUIREMENTS (Please tick as applicable)

X Standard Storage

☐ Extended Storage

Specify Disposal Date:

Note: Extended storage may incur additional charges

*TURNAROUND (Please check box)

X 5 - Days (ALS Choice)

☐ 3 Day (+75%)

☐ 2 Day (+100%)

☐ 1 Day (+150%)

Comments

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX (Soil/Solid, Water/Liquid, Sediment, Sludge, Solid, Biosolid)	PFAS - Full Suite (28 analytes)												LabCtrl (optional for reporting) Dup	MS	Additional Information (Comments/Analysis Requirements, Dilutions, Preservation, Filtering, Special Handling etc)
1	CED_0876_PEASMONT_2A_0.0-0.1		[redacted]		W	X												☐	☐	
																		☐	☐	

Receipt Detail (Client to Advise)

Cooling Method: Ice / Frozen / Wet Ice / Frozen / Packed / Other

Sample Temp on Receipt: °C °C °C

Temp Blank (Yes / No) (Applicable for Chilled Samples)

Custody Seals Intact (Yes / No) (Applicable for Chilled Samples)

Cooler Packs: ☐ Cooler Packs ☐ Other

Facility (Circle): Townsville Cairns Brisbane

Courier: [redacted]

Relinquished by: [redacted] Date/Time: 13/10/2024 13:45

Received by: [redacted] Date/Time: 22/10/24

Relinquished by: Date/Time:

Received by: Date/Time:

WSP Australia P/L QLD
900 Ann Street
Fortitude Valley
QLD 4006

NATA Accredited
Accreditation Number 1261
Site Number 20794 & 2780

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **1148384-S-V2**
Project name LAVARACK BARRACKS TOWNSVILLE
Project ID QLD_0874_PFASMGMT_24
Received Date Oct 11, 2024

Client Sample ID			**0229_QC200_241008**	**0229_QC201_241009**	**0229_QC202_241009**
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**B24-Oc0029725**	**B24-Oc0029726**	**B24-Oc0029727**
Date Sampled			**Oct 08, 2024**	**Oct 09, 2024**	**Oct 09, 2024**
Test/Reference	LOR	Unit			
Sample Properties					
% Moisture	1	%	13	59	17
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	37	76	69
13C5-PFPeA (surr.)	1	%	58	104	109
13C5-PFHxA (surr.)	1	%	55	102	105
13C4-PFHpA (surr.)	1	%	52	86	88
13C8-PFOA (surr.)	1	%	61	95	97
13C5-PFNA (surr.)	1	%	71	100	102
13C6-PFDA (surr.)	1	%	81	103	108
13C2-PFUnDA (surr.)	1	%	41	60	73
13C2-PFDoDA (surr.)	1	%	76	87	112
13C2-PFTeDA (surr.)	1	%	93	81	110
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10

Client Sample ID			0229_QC200_241008	0229_QC201_241009	0229_QC202_241009
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			B24-Oc0029725	B24-Oc0029726	B24-Oc0029727
Date Sampled			Oct 08, 2024	Oct 09, 2024	Oct 09, 2024
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonamido substances					
13C8-FOSA (surr.)	1	%	78	68	101
D3-N-MeFOSA (surr.)	1	%	59	43	82
D5-N-EtFOSA (surr.)	1	%	55	45	75
D7-N-MeFOSE (surr.)	1	%	46	33	76
D9-N-EtFOSE (surr.)	1	%	57	38	72
D5-N-EtFOSAA (surr.)	1	%	J-5.0	12	25
D3-N-MeFOSAA (surr.)	1	%	44	73	103
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)N11	5	ug/kg	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)N15	5	ug/kg	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)N15	5	ug/kg	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)N15	5	ug/kg	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)N11	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)N15	5	ug/kg	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)N11	5	ug/kg	< 5	N09 17	N09 13
Perfluorodecanesulfonic acid (PFDS)N15	5	ug/kg	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	85	111	109
18O2-PFHxS (surr.)	1	%	110	115	122
13C8-PFOS (surr.)	1	%	84	95	107
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)N11	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)N11	10	ug/kg	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)N11	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)N11	5	ug/kg	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	32	111	95
13C2-6:2 FTSA (surr.)	1	%	64	116	95
13C2-8:2 FTSA (surr.)	1	%	69	83	63
13C2-10:2 FTSA (surr.)	1	%	26	43	51
PFASs Summations					
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	17	13
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	17	13
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	17	13
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	17	13
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Brisbane	Oct 11, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Oct 15, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Oct 15, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Oct 15, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Oct 15, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Project Name: LAVARACK BARRACKS TOWNSVILLE
Project ID: QLD_0874_PFASMGMT_24

Order No.: PS129286
Report #: 1148384
Phone: [redacted]
Fax: [redacted]

Received: Oct 11, 2024 2:00 PM
Due: Oct 18, 2024
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	0229_QC200_241008	Oct 08, 2024		Sludge	B24-Oc0029725	X	X
2	0229_QC201_241009	Oct 09, 2024		Sludge	B24-Oc0029726	X	X
3	0229_QC202_241009	Oct 09, 2024		Sludge	B24-Oc0029727	X	X
Test Counts						3	3

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	107			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	94			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	81			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	83			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	88			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	81			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	70			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	92			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	66			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	83			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	70			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	87			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	87			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	89			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	85			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	84			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	129			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	53			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	98			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	90			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	95			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	103			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	92			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	102			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	92			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	85			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	87			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	91			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B24-Oc0028757	NCP	%	120			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B24-Oc0028757	NCP	%	95			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B24-Oc0028757	NCP	%	81			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B24-Oc0028757	NCP	%	76			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B24-Oc0028757	NCP	%	96			50-150	Pass	
Perfluorononanoic acid (PFNA)	B24-Oc0028757	NCP	%	82			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B24-Oc0028757	NCP	%	59			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B24-Oc0028757	NCP	%	95			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B24-Oc0028757	NCP	%	59			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B24-Oc0028757	NCP	%	81			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B24-Oc0028757	NCP	%	56			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B24-Oc0028757	NCP	%	78			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B24-Oc0028757	NCP	%	78			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B24-Oc0028757	NCP	%	85			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B24-Oc0028757	NCP	%	101			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B24-Oc0028757	NCP	%	79			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B24-Oc0028757	NCP	%	105			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B24-Oc0028757	NCP	%	55			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B24-Oc0028757	NCP	%	96			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B24-Oc0028757	NCP	%	84			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B24-Oc0028757	NCP	%	94			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B24-Oc0028757	NCP	%	105			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B24-Oc0028757	NCP	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B24-Oc0028757	NCP	%	103			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B24-Oc0028757	NCP	%	82			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B24-Oc0028757	NCP	%	83			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B24-Oc0028757	NCP	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B24-Oc0028757	NCP	%	104			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B24-Oc0028757	NCP	%	109			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B24-Oc0028757	NCP	%	96			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B24-Oc0029725	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B24-Oc0029725	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B24-Oc0029725	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B24-Oc0029725	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	N24-Oc0030961	NCP	%	41	49	18	30%	Pass	

Comments

Report has been revised (V2) to update sample matrix from Sludge to Soil.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
J-	If the percent recoveries were less than the lower control limit, qualify detects for the analyte in associated samples as estimated with a negative bias J-.
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager
[redacted] Senior Analyst-PFAS
[redacted] Senior Analyst-Sample Properties

[redacted]

Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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eurofins | Environment Testing

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Eurofins Environment Testing Australia Pty Ltd

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Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: WSP Australia P/L QLD
Contact name: [redacted]
Project name: LAVARACK BARRACKS TOWNSVILLE
Project ID: QLD_0874_PFASMGMT_24
Turnaround time: 5 Day
Date/Time received Oct 11, 2024 2:00 PM
Eurofins reference 1148384

Sample Information

✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

✓ All samples have been received as described on the above COC.

✓ COC has been completed correctly.

✓ Attempt to chill was evident.

✓ Appropriately preserved sample containers have been used.

✓ All samples were received in good condition.

✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

✓ Appropriate sample containers have been used.

✓ Sample containers for volatile analysis received with zero headspace.

✗ Split sample sent to requested external lab.

✗ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted] **on phone :** [redacted] **or by email:** [redacted]

Results will be delivered electronically via email to [redacted] - [redacted]

Note: A copy of these results will also be delivered to the general WSP Australia P/L QLD email address.

Global Leader - Results you can trust

CHAIN OF CUSTODY

Mandatory Fields

Page ___ of ___

CoC #:

CLIENT CODE:		*PROJECT MANAGER:	[redacted]	SAMPLER:	[redacted]
*CLIENT:	WSP Australia Pty Limited	*PM MOBILE:		SAMPLER MOBILE:	
OFFICE (Invoiced Office):	Level 27, 680 George Street Sydney, 2000	ALS QUOTE # (Client's if blank):	EB23PAABRISOLD0014 V3	PURCHASE ORDER NO.:	PO129286
PROJECT NO./PROJECT:	QLD_0874_PFASMSMT_24			SITE:	Lavarack Barracks, Townsville
*INVOICE TO: (client default if left blank)	dilini.bandh@wsp.com andrew.hallaway@wsp.com				☐ QC Invoice to PM
*EMAIL REPORTS TO: (default to PM if blank)	gld.au_sedat_labreports@wsp.com darya.labreports@sedat.com.au dilini.bandh@wsp.com michael.heath@wsp.com				

BIOSECURITY

Country of Origin: (if not Australia)

WO Sticker to go here (ALS use only)

*** STORAGE REQUIREMENTS** (Please check box → Standard Storage time from receipt of samples: Water - 2 weeks; Soils - 2 months)

- ☒ Standard Storage
- ☐ Extended Storage

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** (Please check box → Not all tests can be expedited, contact Client Services for more information)

- ☒ 5+ days (no surcharge)
- ☐ 3 day (+15%)
- ☐ 2 day (+35%)
- ☐ 1 day (+50%)

***ANALYSIS REQUIRED**

Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

PFAS - Full Suite (28 analytes)

[redacted]

Date/Time Sampled: 8/10/24 @ 1100

Chilled:

Temp:

Correction:

Final Temp: 9.6

Comments:

ALS use Only: Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: SW, GW, SD, Other, Please specify	PFAS - Full Suite (28 analytes)	Lab QC (additional quality QC) Dup	Lab QC (additional quality QC) MS	Additional Information (Comments on dilutions - e.g. samples known high concentration)
	0229_SW233_241008		8/10/2024	1	W	X	☐	☐	
	0229_SW242_241008		8/10/2024	1	W	X	☐	☐	
	0229_SW243_241008		8/10/2024	1	W	X	☐	☐	
	0229_QC100_241008		8/10/2024	2	S/W	X	☐	☐	
✓	0229_QC200_241008		8/10/2024	2	S/W	X	☐	☐	Please send to Eurofins
	0229_QC101_241009		9/10/2024	2	S/W	X	☐	☐	
✓	0229_QC201_241009		9/10/2024	2	S/W	X	☐	☐	Please send to Eurofins
	0229_QC102_241009		9/10/2024	2	S/W	X	☐	☐	
✓	0229_QC202_241009		9/10/2024	2	S/W	X	☐	☐	Please send to Eurofins
	0229_QC000_241009		9/10/2024	2	S/W	X	☐	☐	Trip Blank. Please use the name 0229_QC1000_241009

Receipt Detail (Lab Use Only): Chilling Method: Ice / Frozen / Melted; Ice Bricks / Frozen / Thawed; None

Sample Temp on Receipt: °C °C °C

Security Seal Intact: Yes / No / N/A (if known)

Carrier Details: ☐ Courier/Post ☐ Client

Cool Room #:

Packaging (Circle): Hard Esky, Foam Esky, Soft Bag/Other

Count: A B E

Relinquished by:	DILINI Heath	Signature:		Date/Time:	9/10/2024 17:08
Relinquished by:		Signature:		Date/Time:	
Received by:		Signature:		Date/Time:	
Received by:		Signature:		Date/Time:	

1148384

WSP Australia P/L QLD
900 Ann Street
Fortitude Valley
QLD 4006

NATA Accredited
Accreditation Number 1261
Site Number 20794 & 2780

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **1152729-W**
Project name LAVARACK BARRACKS TOWNSVILLE
Project ID QLD_0874_PFASMGMT_24
Received Date Oct 11, 2024

Client Sample ID			**0229_QC200_241008**	**0229_QC201_241009**	**0229_QC202_241009**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins Sample No.			**B24-Oc0063501**	**B24-Oc0063502**	**B24-Oc0063503**
Date Sampled			**Oct 08, 2024**	**Oct 09, 2024**	**Oct 09, 2024**
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	0.05	0.10
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	[G01]< 0.2
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.02	0.39	0.65
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	[N09]0.05	[N09]0.09
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	[N09]0.09	[N09]0.17
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	56	86	52
13C5-PFPeA (surr.)	1	%	75	100	55
13C5-PFHxA (surr.)	1	%	63	76	64
13C4-PFHpA (surr.)	1	%	78	127	66
13C8-PFOA (surr.)	1	%	68	117	62
13C5-PFNA (surr.)	1	%	62	123	67
13C6-PFDA (surr.)	1	%	55	98	56
13C2-PFUnDA (surr.)	1	%	54	109	59
13C2-PFDoDA (surr.)	1	%	66	121	61
13C2-PFTeDA (surr.)	1	%	61	147	57
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	68	123	58
D3-N-MeFOSA (surr.)	1	%	47	133	15

Client Sample ID			0229_QC200_241008	0229_QC201_241009	0229_QC202_241009
Sample Matrix			Water	Water	Water
Eurofins Sample No.			B24-Oc0063501	B24-Oc0063502	B24-Oc0063503
Date Sampled			Oct 08, 2024	Oct 09, 2024	Oct 09, 2024
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonamido substances					
D5-N-EtFOSA (surr.)	1	%	47	159	21
D7-N-MeFOSE (surr.)	1	%	51	121	30
D9-N-EtFOSE (surr.)	1	%	45	111	31
D5-N-EtFOSAA (surr.)	1	%	49	93	51
D3-N-MeFOSAA (surr.)	1	%	44	88	48
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.01	0.20	0.34
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	0.10	0.14
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	[N09]0.20	[N09]0.33
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.04	[N09]1.7	[N09]3.1
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	[N09]0.11	[N09]0.19
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.17	[N09]1.7	[N09]3.5
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	57	95	55
18O2-PFHxS (surr.)	1	%	68	117	52
13C8-PFOS (surr.)	1	%	58	113	53
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	45	73	40
13C2-6:2 FTSA (surr.)	1	%	56	130	73
13C2-8:2 FTSA (surr.)	1	%	47	104	63
13C2-10:2 FTSA (surr.)	1	%	57	132	68
PFASs Summations					
Sum (PFHxS + PFOS)*	0.01	ug/L	0.21	3.4	6.6
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.17	1.79	3.67
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.21	3.49	6.77
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.24	4.18	7.95
Sum of PFASs (n=30)*	0.1	ug/L	0.24	4.59	8.61

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Oct 25, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Oct 25, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Oct 25, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Oct 25, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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web: www.eurofins.com.au
email: [redacted]

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ABN: 50 005 085 521

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: WSP Australia P/L QLD
Address: 900 Ann Street
Fortitude Valley
QLD 4006

Project Name: LAVARACK BARRACKS TOWNSVILLE
Project ID: QLD_0874_PFASMGMT_24

Order No.: PS129286
Report #: 1152729
Phone: [redacted]
Fax: [redacted]

Received: Oct 11, 2024 2:00 PM
Due: Oct 18, 2024
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0229_QC200_241008	Oct 08, 2024		Water	B24-Oc0063501	X
2	0229_QC201_241009	Oct 09, 2024		Water	B24-Oc0063502	X
3	0229_QC202_241009	Oct 09, 2024		Water	B24-Oc0063503	X
Test Counts						3

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	104			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	89			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	106			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	108			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	101			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	100			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	103			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	97			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	93			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	106			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	89			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	88			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	80			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	76			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	78			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	63			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	88			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	96			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	93			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	97			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	100			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	91			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	111			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	118			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	100			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	55			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	102			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	124			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	122			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	83			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B24-Oc0063501	CP	%	93			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B24-Oc0063501	CP	%	108			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B24-Oc0063501	CP	%	117			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B24-Oc0063501	CP	%	108			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B24-Oc0063501	CP	%	97			50-150	Pass	
Perfluorononanoic acid (PFNA)	B24-Oc0063501	CP	%	89			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B24-Oc0063501	CP	%	101			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B24-Oc0063501	CP	%	106			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B24-Oc0063501	CP	%	106			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B24-Oc0063501	CP	%	137			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B24-Oc0063501	CP	%	96			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B24-Oc0063501	CP	%	61			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B24-Oc0063501	CP	%	115			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B24-Oc0063501	CP	%	90			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B24-Oc0063501	CP	%	90			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B24-Oc0063501	CP	%	118			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B24-Oc0063501	CP	%	95			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B24-Oc0063501	CP	%	97			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B24-Oc0063501	CP	%	100			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B24-Oc0063501	CP	%	110			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B24-Oc0063501	CP	%	120			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B24-Oc0063501	CP	%	104			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B24-Oc0063501	CP	%	89			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B24-Oc0063501	CP	%	91			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B24-Oc0063501	CP	%	84			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B24-Oc0063501	CP	%	68			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B24-Oc0063501	CP	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B24-Oc0063501	CP	%	102			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B24-Oc0063501	CP	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B24-Oc0063501	CP	%	114			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B24-Oc0063502	CP	ug/L	0.05	0.05	3.0	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B24-Oc0063502	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B24-Oc0063502	CP	ug/L	0.39	0.37	6.0	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B24-Oc0063502	CP	ug/L	0.05	0.05	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B24-Oc0063502	CP	ug/L	0.09	0.09	3.0	30%	Pass	
Perfluorononanoic acid (PFNA)	B24-Oc0063502	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B24-Oc0063502	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B24-Oc0063502	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B24-Oc0063502	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B24-Oc0063502	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B24-Oc0063502	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B24-Oc0063502	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B24-Oc0063502	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B24-Oc0063502	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B24-Oc0063502	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B24-Oc0063502	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B24-Oc0063502	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B24-Oc0063502	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B24-Oc0063502	CP	ug/L	0.20	0.19	6.0	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B24-Oc0063502	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B24-Oc0063502	CP	ug/L	0.10	0.09	13	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B24-Oc0063502	CP	ug/L	0.20	0.17	13	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B24-Oc0063502	CP	ug/L	1.7	1.5	12	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B24-Oc0063502	CP	ug/L	0.11	0.09	13	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B24-Oc0063502	CP	ug/L	1.7	1.7	1.0	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B24-Oc0063502	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B24-Oc0063502	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B24-Oc0063502	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B24-Oc0063502	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B24-Oc0063502	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager

[redacted] Senior Analyst-PFAS

[redacted]

Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Eurofins Environment Testing Australia Pty Ltd

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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: WSP Australia P/L QLD
Contact name: [redacted]
Project name: LAVARACK BARRACKS TOWNSVILLE
Project ID: QLD_0874_PFASMGMT_24
Turnaround time: 5 Day
Date/Time received Oct 11, 2024 2:00 PM
Eurofins reference 1152729

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted] **on phone :** [redacted] **or by email:** [redacted]

Results will be delivered electronically via email to [redacted] - [redacted]

Note: A copy of these results will also be delivered to the general WSP Australia P/L QLD email address.

Global Leader - Results you can trust

CHAIN OF CUSTODY

Mandatory Fields

Page ___ of ___

CoC #:

CLIENT CODE:		*PROJECT MANAGER:	[redacted]	SAMPLER:	[redacted]
*CLIENT:	WSP Australia Pty Limited	*PM MOBILE:		SAMPLER MOBILE:	
OFFICE (Invoiced Office):	Level 27, 680 George Street Sydney, 2000	ALS QUOTE # (Client's if blank):	EB23PAB80GLD0014 V3	PURCHASE ORDER NO.:	PS129286
PROJECT NO./PROJECT:	QLD_0874_PFASMGMT_24			SITE:	Lavarack Barracks, Townsville
*INVOICE TO: (client default if left blank)	dilini.bandh@wsp.com andrew.hallowes@wsp.com				☐ QC Invoice to PM
*EMAIL REPORTS TO: (default to PM if blank)	gld.au_sedat_labreports@wsp.com darya.labreports@sedat.com.au dilini.bandh@wsp.com michael.heath@wsp.com				

BIOSECURITY

Country of Origin (if not Australia):

WO Sticker to go here (ALS use only)

***ANALYSIS REQUIRED**

Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

*** STORAGE REQUIREMENTS** (Please check box → Standard Storage time from receipt of sample: Water - 2 weeks Soils - 2 months)	☒ Standard Storage	*** TURNAROUND** (Please check box → (Not all tests can be expedited, contact Client Services for more information)	☒ 5+ days (no surcharge)
	☐ Extended Storage		☐ 3 day (+ 15%)
	Specify Disposal Date:		☐ 2 day (+ 35%)
	Note: Extended storage incurs a fee and requires a signed agreement.		☐ 1 day (+ 50%)

Comments:

Date/Time Received: 9/10/24 @ 1100

Chilled: Yes

Temp: 9.6

Correction: —

Final Temp: —

Night Geo 2.00pm

ALS use Only: Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: (Soil, Solid, Sediment, Water, Ground Water, Wastewater, Leachate, Saliva, Swab, Wipe, Paint, Hair, Nail, Tissue, Biota, Other (specify))	PFAS - Full Suite (28 analytes)	Lab QC (additional quality QC) Dup	Lab QC (additional quality QC) MS	Additional Information (Comments on dilutions - e.g. samples known high concentration)
	0229_SW233_241008		8/10/2024	1	W	X	☐	☐	
	0229_SW242_241008		8/10/2024	1	W	X	☐	☐	
	0229_SW243_241008		8/10/2024	1	W	X	☐	☐	
	0229_QC100_241008		8/10/2024	2	S/W	X	☐	☐	
	0229_QC208_241008		8/10/2024	2	S/W	X	☐	☐	Please send to Eurofins
	0229_QC101_241009		9/10/2024	2	S/W	X	☐	☐	
	0229_QC203_241009		9/10/2024	2	S/W	X	☐	☐	Please send to Eurofins
	0229_QC102_241009		9/10/2024	2	S/W	X	☐	☐	
	0229_QC202_241009		9/10/2024	2	S/W	X	☐	☐	Please send to Eurofins
	0229_QC000_241009		9/10/2024	2	S/W	X	☐	☐	Trip Blank. Please use the name 0229_QC000_241009

Receipt Detail (Lab Use Only)	Chilling Method:	Ice Frozen / Melted	Ice Bricks Frozen / Thawed	None	Sample Temp on Receipt:	°C	°C

Security Seal Intact: Yes / No / N/A (Circle)

Courier Details: ☐ Courier/Post ☐ Client

Cust Invoice #:

Package (Circle): Hard Esky Foam Esky Sat/Rigid/Other

Count: A B C

Relinquished by:	Dilini Heath	Signature:		Date/Time:	9/10/2024 17:30
Relinquished by:		Signature:		Date/Time:	
Received by:		Signature:		Date/Time:	
Received by:		Signature:		Date/Time:	

1148384

WSP Australia P/L QLD
900 Ann Street
Fortitude Valley
QLD 4006

NATA Accredited
Accreditation Number 1261
Site Number 20794 & 2780

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **1152910-W**
Project name LAVARACK BARRACKS TOWNSVILLE
Project ID QLD_0874_PFASMGMT_24
Received Date Oct 24, 2024

Client Sample ID			**0229_QC200_241016**	**0229_QC201_241016**	**0229_QC202_241016**	**0229_QC203_241016**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**B24-Oc0064967**	**B24-Oc0064968**	**B24-Oc0064969**	**B24-Oc0064970**
Date Sampled			**Oct 16, 2024**	**Oct 16, 2024**	**Oct 16, 2024**	**Oct 16, 2024**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	0.06	2.4	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	4.2	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.05	0.04	18	0.07
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	2.8	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.03	[N09]0.01	[N09]4.9	[N09]0.02
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.47	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	110	67	64	69
13C5-PFPeA (surr.)	1	%	129	69	54	63
13C5-PFHxA (surr.)	1	%	142	82	84	78
13C4-PFHpA (surr.)	1	%	150	82	61	108
13C8-PFOA (surr.)	1	%	139	73	51	123
13C5-PFNA (surr.)	1	%	116	51	52	103
13C6-PFDA (surr.)	1	%	124	53	51	109
13C2-PFUnDA (surr.)	1	%	117	56	64	108
13C2-PFDoDA (surr.)	1	%	113	48	51	88
13C2-PFTeDA (surr.)	1	%	98	50	47	114
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.07	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	87	48	52	105
D3-N-MeFOSA (surr.)	1	%	41	55	62	114

Client Sample ID			0229_QC200_241016	0229_QC201_241016	0229_QC202_241016	0229_QC203_241016
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B24-Oc0064967	B24-Oc0064968	B24-Oc0064969	B24-Oc0064970
Date Sampled			Oct 16, 2024	Oct 16, 2024	Oct 16, 2024	Oct 16, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	53	61	74	141
D7-N-MeFOSE (surr.)	1	%	77	123	59	77
D9-N-EtFOSE (surr.)	1	%	72	51	51	89
D5-N-EtFOSAA (surr.)	1	%	97	45	45	85
D3-N-MeFOSAA (surr.)	1	%	77	39	37	67
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.06	0.05	14	0.02
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	[G01]< 0.1	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.03	0.01	7.1	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]0.05	[N09]0.02	[N09]15	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.46	[N09]0.17	[N09]65	[N09]0.06
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	[N09]0.03	[N09]< 0.01	[N09]2.4	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.18	[N09]0.14	[N09]26	[N09]0.52
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	[G01]< 0.1	< 0.01
13C3-PFBS (surr.)	1	%	137	76	52	123
18O2-PFHxS (surr.)	1	%	133	72	95	118
13C8-PFOS (surr.)	1	%	135	69	95	90
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.02	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	0.08	< 0.05	0.19	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.07	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	143	123	51	106
13C2-6:2 FTSA (surr.)	1	%	94	82	116	151
13C2-8:2 FTSA (surr.)	1	%	115	49	29	141
13C2-10:2 FTSA (surr.)	1	%	142	61	57	130
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.64	0.31	91	0.58
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.21	0.15	30.9	0.54
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.67	0.32	95.9	0.6
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.86	0.47	137.56	0.69
Sum of PFASs (n=30)*	0.1	ug/L	0.97	0.5	162.62	0.69

Client Sample ID			0229_QC204_241016
Sample Matrix			Water
Eurofins Sample No.			B24-Oc0064971
Date Sampled			Oct 16, 2024
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	97
13C5-PFPeA (surr.)	1	%	111
13C5-PFHxA (surr.)	1	%	122
13C4-PFHpA (surr.)	1	%	123
13C8-PFOA (surr.)	1	%	121
13C5-PFNA (surr.)	1	%	94
13C6-PFDA (surr.)	1	%	104
13C2-PFUnDA (surr.)	1	%	108
13C2-PFDoDA (surr.)	1	%	106
13C2-PFTeDA (surr.)	1	%	93
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	103
D3-N-MeFOSA (surr.)	1	%	128
D5-N-EtFOSA (surr.)	1	%	146
D7-N-MeFOSE (surr.)	1	%	102
D9-N-EtFOSE (surr.)	1	%	117
D5-N-EtFOSAA (surr.)	1	%	89
D3-N-MeFOSAA (surr.)	1	%	75
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.05
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.04
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.02
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01

Client Sample ID			0229_QC204_241016
Sample Matrix			**Water**
Eurofins Sample No.			**B24-Oc0064971**
Date Sampled			**Oct 16, 2024**
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonic acids (PFSAs)			
13C3-PFBS (surr.)	1	%	124
18O2-PFHxS (surr.)	1	%	123
13C8-PFOS (surr.)	1	%	126
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	119
13C2-6:2 FTSA (surr.)	1	%	115
13C2-8:2 FTSA (surr.)	1	%	98
13C2-10:2 FTSA (surr.)	1	%	135
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	0.06
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.02
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.06
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.12
Sum of PFASs (n=30)*	0.1	ug/L	0.12

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Oct 25, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Oct 25, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Oct 25, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Oct 25, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

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ABN: 50 005 085 521

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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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Project Name: LAVARACK BARRACKS TOWNSVILLE
Project ID: QLD_0874_PFASMGMT_24

Order No.: P129286
Report #: 1152910
Phone: [redacted]
Fax: [redacted]

Received: Oct 24, 2024 3:30 PM
Due: Oct 31, 2024
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0229_QC200_241016	Oct 16, 2024		Water	B24-Oc0064967	X
2	0229_QC201_241016	Oct 16, 2024		Water	B24-Oc0064968	X
3	0229_QC202_241016	Oct 16, 2024		Water	B24-Oc0064969	X
4	0229_QC203_241016	Oct 16, 2024		Water	B24-Oc0064970	X
5	0229_QC204_241016	Oct 16, 2024		Water	B24-Oc0064971	X
Test Counts						5

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	97			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	86			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	106			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	91			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	94			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	97			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	107			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	84			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	97			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	92			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	77			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	66			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	82			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	88			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	84			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	79			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	98			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	94			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	97			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	122			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	108			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	93			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	105			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	110			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	103			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	62			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	104			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	101			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B24-Oc0064970	CP	%	107			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B24-Oc0064970	CP	%	54			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B24-Oc0064970	CP	%	88			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B24-Oc0064970	CP	%	84			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B24-Oc0064970	CP	%	90			50-150	Pass	
Perfluorononanoic acid (PFNA)	B24-Oc0064970	CP	%	91			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B24-Oc0064970	CP	%	126			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B24-Oc0064970	CP	%	99			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B24-Oc0064970	CP	%	110			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B24-Oc0064970	CP	%	77			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B24-Oc0064970	CP	%	79			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B24-Oc0064970	CP	%	98			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B24-Oc0064970	CP	%	111			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B24-Oc0064970	CP	%	112			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B24-Oc0064970	CP	%	93			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B24-Oc0064970	CP	%	128			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B24-Oc0064970	CP	%	106			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B24-Oc0064970	CP	%	112			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B24-Oc0064970	CP	%	149			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B24-Oc0064970	CP	%	123			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B24-Oc0064970	CP	%	147			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B24-Oc0064970	CP	%	139			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B24-Oc0064970	CP	%	146			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B24-Oc0064970	CP	%	133			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B24-Oc0064970	CP	%	218			50-150	Fail	J01
Perfluorodecanesulfonic acid (PFDS)	B24-Oc0064970	CP	%	116			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B24-Oc0064970	CP	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B24-Oc0064970	CP	%	130			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B24-Oc0064970	CP	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B24-Oc0064970	CP	%	125			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B24-Oc0064946	NCP	ug/L	18	18	2.0	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B24-Oc0064946	NCP	ug/L	23	24	6.0	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B24-Oc0064941	NCP	ug/L	3.3	3.6	7.0	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B24-Oc0064941	NCP	ug/L	0.23	0.25	6.0	30%	Pass	
Perfluorooctanoic acid (PFOA)	B24-Oc0064941	NCP	ug/L	0.14	0.14	2.0	30%	Pass	
Perfluorononanoic acid (PFNA)	B24-Oc0064941	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B24-Oc0064941	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B24-Oc0064941	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B24-Oc0064941	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B24-Oc0064941	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B24-Oc0064941	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B24-Oc0064941	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B24-Oc0064941	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B24-Oc0064941	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B24-Oc0064941	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B24-Oc0064941	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B24-Oc0064941	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B24-Oc0064946	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B24-Oc0064941	NCP	ug/L	1.2	1.2	1.0	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B24-Oc0064941	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B24-Oc0064941	NCP	ug/L	0.39	0.35	12	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B24-Oc0064941	NCP	ug/L	1.1	1.2	13	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B24-Oc0064941	NCP	ug/L	9.8	13	26	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B24-Oc0064941	NCP	ug/L	0.19	0.26	29	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B24-Oc0064941	NCP	ug/L	0.03	0.03	3.0	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B24-Oc0064941	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B24-Oc0064946	NCP	ug/L	0.10	0.09	10	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B24-Oc0064946	NCP	ug/L	5.8	5.5	6.0	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B24-Oc0064941	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B24-Oc0064941	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
J01	Failures of the Matrix Spike (MS) due to the presence of analytes(s) in parent sample at > 3X the spike concentration.
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager
[redacted] Senior Analyst-PFAS

[redacted]
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

Eurofins ARL Pty Ltd

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Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: WSP Australia P/L QLD
Contact name: [redacted]
Project name: LAVARACK BARRACKS TOWNSVILLE
Project ID: QLD_0874_PFASMGMT_24
Turnaround time: 5 Day
Date/Time received Oct 24, 2024 3:30 PM
Eurofins reference 1152910

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted] **on phone :** [redacted] **or by email:** [redacted]

Results will be delivered electronically via email to [redacted] - [redacted]

Note: A copy of these results will also be delivered to the general WSP Australia P/L QLD email address.

Global Leader - Results you can trust

Mandatory Fields

CHAIN OF CUSTODY

Page ___of___

CLIENT CODE:		*PROJECT MANAGER:	[redacted]	SAMPLER:	[redacted]
*CLIENT:	WSP Australia Pty Limited	*PM MOBILE:		SAMPLER MOBILE:	
OFFICE: (Invoiced Office)	Level 27, 680 George Street Sydney, 2000	ALS QUOTE # (Client PO if blank)	EB23PABBRIQLD0014 V2	PURCHASE ORDER NO.:	PO129266
PROJECT NO./PROJECT:		QLD_0074_PFASMGMT_24		SITE:	Leverach Barracks, Townsville
*INVOICE TO: (Client default if left)		dlbc.leverach@wsp.com andrew.holloway@wsp.com		☐ CC Invoice to PM	
*EMAIL REPORTS TO: (Client default if left)		qld.au_water_labreports@wsp.com deep.labreports@wsp.com.au dlbc.leverach@wsp.com michael.bruhl@wsp.com			

BIOSECURITY

Country of Origin: (Client to Complete)

2/11/10 5:30pm

Date: Client: Time: Courier: 17 ly

WO Sticker to go here (ALS use only)

muskaan

***ANALYSIS REQUIRED**

Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

*** STORAGE REQUIREMENTS** (Please check box → Standard Storage time from receipt of samples: Water - 2 weeks; Soils - 2 months)

- X Standard Storage
- ☐ Extended Storage — Specify Disposal Date: (Note: Extended storage incurs a fee and requires a signed agreement)

*** TURNAROUND** (Please check box → Mon-Fri standard turnaround, contact Client Services for more information)

- X 5+ days (no surcharge)
- ☐ 3 days (+15%)
- ☐ 2 day (+30%)
- ☐ 1 day (+100%)

Comments:

ALS Use Only / Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: (W) Water, (S) Soil/Solid, (SD) Sediment, (P) Wipe, (A) Air, (O) Other, (B) Biota	PFAS - Full Suite (28 analytes)	Lab QC (additional QA/QC req.) Dup	Lab QC (additional QA/QC req.) MS	Additional Information (Comments on hazards - e.g. asbestos, known high contamination)
	2229_MW203_241016		16/10/2023		W	X	☐	☐	
							☐	☐	
	0229_MW3305_241016		16/10/2023		W	X			
	0229_QC102_241016		16/10/2023		W	X			
	0229_QC103_241016		16/10/2023		W	X			Please send to Eurofins
	0229_QC201_241016		16/10/2023		W	X			
	0229_QC301_241016		16/10/2023		W	X			Please send to Eurofins
	0229_QC302_241016		16/10/2023		W	X			
	0229_QC303_241016		16/10/2023		W	X			Please send to Eurofins
	0229_QC304_241016		16/10/2023		W	X			

1152970

Receipt Detail (Lab Use ONLY)	Delivery Method:	Ice / Blocks: Present / Melted / Absent / Thawed	None	Sample(s) Temp on Receipt: °C °C °C	Security Seal: Intact / Broken / Not Present	Yes / No / N/A (None)	Carrier Details:	☐ Courier Pick	☐ Client	Packaging (Circle): Hard Esky / Foam Esky / Bottle/Other Client: # # #

Relinquished by:	Other Person	Signature:	Date:	Date/Time: 16/10/2023 17:00	Received by:	Signature:	Date/Time:
Relinquished by:		Signature:	Date/Time:		Received by:	Signature:	Date/Time:

Mandatory Fields

CHAIN OF CUSTODY

Page ___of___

CLIENT CODE		*PROJECT MANAGER:	[redacted]	SAMPLER	[redacted]
*CLIENT:	WSP Australia Pty Limited	*PM MOBILE:		SAMPLER MOBILE	
OFFICE (Invoiced Office)	Level 37, 680 George Street Sydney, 2000	ALS QUOTE # (Client to Validate)	EB23PAR80GLD0014 V2	PURCHASE ORDER NO.	PS129286
PROJECT NO./PROJECT		QLD_6874_PFASMSMT_24		SITE	Lavarack Barracks, Townsville
*INVOICE TO (client default if n/a)		dilini.herath@wsp.com andrew.holloway@wsp.com		☐ CC Invoice to PM	
*EMAIL REPORTS TO (default to PM if blank)		phil.wu_wader_labreports@wsp.com deep.labreports@wsdot.com.au dilini.herath@wsp.com michael.hoult@wsp.com			

BIOSECURITY

Country of Origin (If not Australia)

WO Sticker to go here (ALS use only)

*** STORAGE REQUIREMENTS** (Please check one)

- ☒ Standard Storage
- ☐ Extended Storage

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement

*** TURNAROUND** (Please check one)

- ☒ 5+ days (no surcharge)
- ☐ 3 day (+15%)
- ☐ 2 day (+20%)
- ☐ 1 day (+50%)

Comments

***ANALYSIS REQUIRED**

Work on X in the boxes below analysis to indicate the parameters listed above to be tested on that sample.

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX (W) Water (S) Soil/Solid (P) Product	PFAS - Full Suite (28 analytes)												Lab use (additional duties req.) Dup	MS	Additional Information (Comment on hazards - e.g. asbestos, known high concentrations)
	0229_QC203_241016		16/10/2023		W	X												☐	☐	Please send to Eurofins
	0229_QC208_241016		16/10/2023		W	X												☐	☐	
	0229_QC304_241016		16/10/2023		W	X														Please send to Eurofins
	0229_QC306_241016		16/10/2023		W	X														
	0229_QC301_241016		16/10/2023		W												X			
	0229_QC202_241016		16/10/2023		W												X			
	0229_QC205_241016		16/10/2023		W												X			
	0229_QC204_241017		17/10/2023		W	X														
	0229_QC209_241016		16/10/2023		W	X														
	0229_MW201A_241016		16/10/2023		W												X			

1152920

Receipt Detail (Lab Use Only)	Cooling: Yes / No; Method: Frozen / Chilled	Ice Bricks: Present / Absent	Notes	Sample Temp on Receipt	°C	°C	°C	Security Seal Intact (Circle)	Yes / No / Additional	Courier: Courier/Post ☐ Client ☐ Cart Note #	Packages (Circle): Hard Poly Paper Poly Insulbag/Other Count			
												1	1	1

Relinquished by:	Dilini Herath	Signature:		Date/Time:	16/10/2023 13:00
Relinquished by:		Signature:		Date/Time:	
Received by:		Signature:		Date/Time:	
Received by:		Signature:		Date/Time:	

Appendix D

Data Validation

Appendix D

WSP has undertaken a review of data quality for the current sampling round undertaken within the Lavarack Barracks OMP Management Area. The review includes an assessment of the groundwater, surface water, and sediment sampling procedures and the laboratory analysis results provided by Australian Laboratory Services (ALS) and Eurofins. A Quality Assurance and Quality Control (QA/QC) plan adopted for this investigation is provided in the SAQP (WSP 2024).

The objective of the data validation process is to make sure the data reported can be used to achieve the project objectives. The validity of all analytical data reported was assessed by a critical review of the QC check sample results. Accuracy and precision measurements from the appropriate QC check samples were compared with the analytical DQIs to assess the quality of the analytical data. Should data be found to fall outside acceptable limits of accuracy and precision, appropriate corrective actions will be investigated. The data was also evaluated to assess the reproducibility, comparability, and completeness of the data. Upon review of the DQIs, an assessment was made to whether the data can be relied upon for the purposes of the investigation.

QA/QC results are reviewed for each batch of laboratory results in the scope of data validation sheets presented at the end of this appendix. Below sections includes a summary of data validation results for each QA/QC parameter.

Assessment of Field Quality Assurance

Sample Preservation

The temperature of samples recorded by the primary (ALS) and secondary (Eurofins) laboratories were generally below 4 °C, which indicates adequate chilling and preservation of samples at the time of sample submission. Refer to data validation sheets below for more details.

Rinsate Samples

Five rinsate water samples were collected from the decontaminated interphase probe during groundwater sampling. The rinsate sample collection frequency during the sampling event was in accordance with the SAQP (WSP, 2024). Rinsate samples collected during groundwater sampling were tested for the same standard suite of PFAS compounds as the primary samples. Laboratory results reported for all rinsate samples were below the laboratory reporting limits.

Rinsate samples were not collected during surface water and sediment sampling. No reusable equipment was used during surface water sampling as the samples were directly collected into the laboratory-provided sample bottles. For sediment sampling, as the trowel used for sediment sampling was decontaminated between each location and the sediment results are in the same range as the historical results, the sediment results were considered not reliable.

Trip Blanks

Two trip blanks were analysed during the sampling event. The trip blank results were measured below laboratory reporting limits and thus were considered acceptable.

Field Duplicates and Triplicates

The duplicate and triplicate samples were tested for standard suite of PFAS compounds consistent with the analytical program for the primary samples. Duplicate and triplicate results and calculated RPDs are documented in the data validation records presented below. Details of the duplicate and triplicate sample identification are provided in Table D1 and the rate of duplicate analysis is included in Table D2.

Table D1 Duplicates and triplicates samples

Sample Type	Primary Sample	Duplicate	Triplicate
Groundwater	MW135	QC100	QC200
	MW106	QC101	QC201
	MW105	QC102	QC202
	MW120	QC103	QC203
	MW118	QC104	QC204
Surface water and sediments	SD/SW242	QC100	QC200
	SD/SW139	QC101	QC201
	SD/SW140	QC102	QC202
	SD/SW245	QC103	QC203

Table D2 Duplicates and triplicates analysis rate

Sample Type	No of Primary Samples	No of Duplicate Samples	Duplicate Analysis Rate (%)	No of Triplicate Samples	Triplicate Analysis Rate (%)
Groundwater	43	5	1 per 9	5	1 per 9
Surface water	22	4	1 per 6	4	1 per 6
Sediments	31	4	1 per 8	4	1 per 8

The results of duplicate and triplicate analysis were assessed by calculating the RPDs between the primary and duplicate samples and the primary and triplicate samples. An RPD of 0% represents perfect agreement in results while the maximum level of divergence is reflected in an RPD value of 200%. RPDs cannot be calculated if both results are below the laboratory detection limits. The RPDs calculated were generally within the acceptable laboratory-based data quality objectives. The identified RPD exceedances are discussed in detail in the data validation sheets below.

Assessment of Laboratory Quality Assurance

NATA Accreditation

ALS and Eurofins are NATA accredited laboratories for the analyses conducted for this sampling event, except that Eurofins is not NATA accredited for 'total' quantification of PFAS analytes.

Holding Times

Review of the analytical certificates indicates that the analyses were performed within the required holding times.

Method Blanks

The primary laboratory and secondary laboratory method blanks were tested for the range of PFAS compounds analysed in each batch, as determined from the chain of custody documentation accompanying the samples. All laboratory results reported for method blanks were below the laboratory reporting limits. Overall, the method blank results indicate satisfactory clean laboratory conditions in sample preparation and analysis.

Laboratory Control Spikes Recoveries

A review of laboratory control spikes (LCS) indicates LCS were within the laboratory control limit.

Matrix Spike Recoveries

A review of matrix spike recoveries generally indicates matrix spike recoveries were within the laboratory control limits. Refer to the data validation sheets provided below for more details on matrix spike exceedances.

Internal Laboratory Duplicates

A review of laboratory internal duplicates indicates that RPDs were within the laboratory control limit or below the LOR.

Surrogate Recoveries

A review of surrogate spike recoveries indicates that surrogate recoveries were within acceptable control limits.

QA/QC Review Conclusion

Based on the results of this QA/QC evaluation, the analytical data reported for this sampling event are of sufficient quality to meet the objectives of this sampling event and to allow for analysis and interpretation of the data.

DATA VALIDATION SUMMARY SHEET

Project Name:	**Defence - Lavarack Barracks, Townsville - Groundwater**	**Project Number:**	**PS129286**
Primary Laboratory:	**ALS Brisbane**	**Work Order Number:**	**EB2436463, EB2436460**
Secondary Laboratory:	**Eurofins Brisbane**	**Work Order Number:**	**1152910**
Date Sampled:	**16/10/2024-17/10/2024**	**Sample Medium:**	**Water**

Sample Information

Number of Primary Samples:	**43 (1 from EB2436460)**	**Number of Triplicate Samples:**	**5**
Number of Duplicate Samples:	**5**	**Number of Other QAQC Samples:**	**3**

Documentation and Sample Handling Information

	Y/N	Comments
COC completed properly?	Y	Signed by field staff and laboratory personnel.
All requested analysis completed?	Y	All requested analyses on the COC performed by ALS & Eurofins.
Samples received intact and chilled?	Y	ALS: 0.6°C, 1.2°C, 1.8°C, ice bricks present and security seal intact. Eurofins: Attempt to chill was evident, samples received in good order
Samples analysed within appropriate holding times?	Y	All samples were analysed within appropriate holding times (ALS & Eurofins).
Sample volumes sufficient for QC analysis?	Y	Sufficient sample volume was provided for all laboratory tests. It is noted that the DUP and MS analysis rate for ALS was less than the quality
Are there non-NATA accredited methods used?	Y	ALS & Eurofins are NATA accredited for all methods used in this batch. Eurofins are not accredited for PFASs summations.
Chromatograms supplied as appropriate?	N/A	N/A.
Laboratory reports signed by authorised personnel?	Y	All reports signed.

QAQC Sample Information (Method Blank - MB, Rinsate Blank - RB, Field Blank - FB, Trip Blank - TB)

Type	Sample ID	Comments
MB	Method Blank	All results were below the LOR
TB	0229_QC500_241016	All results were below the LOR
Rinsates	QC300, QC301, QC302, QC303, QC304	All results were below the LOR

Laboratory Control Spike (LCS) Analyses

Analyte Group	Comments
All	All LCS recoveries are within the laboratory based DQOs (ALS & Eurofins).

Matrix Spike (MS) Analyses

Analyte Group	Comments
Perfluoroalkyl sulfonic acids (PFSAs)	Eurofins: MS recovery for PFOS (218%) in sample 0229_QC203_241016 are outside DQOs (50-150%). *Refer to overall comments*
-	All other MS recoveries are within the laboratory based DQOs

Laboratory Duplicates (LD) Analyses

Analyte Group	Sample ID	Comments
-	-	All LD RPDs are within the laboratory based DQOs (ALS& Eurofins).

Field Duplicates (FD) Analyses

Analyte Group	Primary ID	Duplicate ID	Comments
PFAS	0229_MW135_241016	0229_QC100_241016	FD RPDs for Perfluorooctanoic Acid (PFOA) (120%) and Perfluoroheptane sulfonic acid (PFHpS) (67%) do not meet DQOs (*Refer to overall comments*).
PFAS	0229_MW106_241016	0229_QC101_241016	FD RPDs for Sum of PFAS (45%), Perfluorohexanoic acid (PFHxA) (67%) and Sum of WA DER PFAS (n=10) (45%) do not meet DQOs (*Refer to overall comments*).
PFAS	0229_MW105_241016	0229_QC102_241016	FD RPDs for 6:2 Fluorotelomer sulfonic acid (6:2 FTSA) (25%), Perfluoroheptane sulfonic acid (PFHpS) (21%) and Perfluorononanoic acid (PFNA) (26%) do not meet DQOs *(Refer to overall comments)* .
PFAS	0229_MW120_241016	0229_QC103_241016	FD RPD for Perfluorohexane sulfonic acid (PFHxS) (63%) does not meet the DQO *(Refer to overall comments)* .
-	-	-	All other FD RPDs are within DQOs.

Field Triplicates (FT) Analyses

Analyte Group	Primary ID	Triplicate ID	Comments
PFAS	0229_MW135_241016	0229_QC200_241016	FT RPDs for Perfluorooctanoic Acid (PFOA) (100%), 6:2 Fluorotelomer sulfonic acid (6:2 FTSA) (46%) and Perfluorohexanoic acid (PFHxA) (86%) do not meet DQOs (*Refer to overall comments*).
PFAS	0229_MW106_241016	0229_QC201_241016	FT RPDs for Perfluorohexane sulfonic acid (PFHxS) (83%), Perfluorooctane sulfonic acid (PFOS) (67%), Sum of PFHxS and PFOS (lab reported) (76%), Sum of PFAS (90%), Perfluorobutane sulfonic acid (PFBS) (50%), Perfluorohexanoic acid (PFHxA) (67%) and Sum of WA DER PFAS (n=10) (85%) do not meet DQOs *(Refer to overall comments)* .
PFAS	0229_MW105_241016	0229_QC202_241016	FT RPDs for Perfluorooctanoic Acid (PFOA) (44%), 6:2 Fluorotelomer sulfonic acid (6:2 FTSA) (51%), Perfluorobutane sulfonic acid (PFBS) (51%), Perfluorobutanoic acid (PFBA) (67%), Perfluoroheptane sulfonic acid (PFHpS) (29%), Perfluoroheptanoic acid (PFHpA) (57%), Perfluorononanoic acid (PFNA) (54%) and Perfluoropentane sulfonic acid (PFPeS) (50%) do not meet DQOs *(Refer to overall comments)* .
PFAS	0229_MW120_241016	0229_QC203_241016	FT RPDs for Perfluorohexane sulfonic acid (PFHxS) (100%), Perfluorooctane sulfonic acid (PFOS) (153%), Sum of PFHxS and PFOS (lab reported) (146%), Sum of PFAS (141%), Perfluorohexanoic acid (PFHxA) (111%) and Sum of WA DER PFAS (n=10) (141%) do not meet DQOs *(Refer to overall comments)* .
PFAS	0229_MW118_241016	0229_QC204_241016	FT RPDs for Sum of PFHxS and PFOS (lab reported) (67%) did not meet the DQO *(Refer to overall comments)* .
-	-	-	All other FT RPDs are within DQOs.

Surrogate Compound Monitoring Analyses

Analyte Group	Analyte(s)	Comments

DATA VALIDATION SUMMARY SHEET

Project Name:	**Defence - Lavarack Barracks, Townsville - Groundwater**	**Project Number:**	**PS129286**
Primary Laboratory:	**ALS Brisbane**	**Work Order Number:**	**EB2436463, EB2436460**
Secondary Laboratory:	**Eurofins Brisbane**	**Work Order Number:**	**1152910**
Date Sampled:	**16/10/2024-17/10/2024**	**Sample Medium:**	**Water**

-	-	All surrogate recoveries are within acceptable DQOs (ALS & Eurofins).

Overall Comments

Eurofins: MS recovery for PFOS (218%) in sample 0229_QC203_241016 are outside DQOs (50-150%). This is due to background concentrations in the parent sample being greater than 3 times the matrix spike concentration. This is not expected to effect the overall validity of this data set as all other PFSAs MS recoveries were acceptable.

ALS: The LOR for 6:2 FTS was raised in sample 0229_QC102_241016 and for PFOS in sample 0229_MW074_241016 due to matrix interference. This should be considered when interpreting the data.

ALS: FD RPDs between samples 0229_MW135_241016 and 0229_QC100_241016 for Perfluorooctanoic Acid (PFOA) (120%) and Perfluoroheptane sulfonic acid (PFHpS) (67%) do not meet DQOs. This primarily due to results being at or below the LOR where RPDs can be magnified. As a conservative measure, the highest reported values will be adopted for interpretive use.

ALS: FD RPDs between samples 0229_MW106_241016 and 0229_QC101_241016 for Sum of PFAS (45%), Perfluorohexanoic acid (PFHxA) (67%) and Sum of WA DER PFAS (n=10) (45%) do not meet DQOs. This primarily due to results being at or below the LOR where RPDs can be magnified. As a conservative measure, the highest reported values will be adopted for interpretive use.

ALS: FD RPDs between samples 0229_MW105_241016 and 0229_QC102_241016 for 6:2 Fluorotelomer sulfonic acid (6:2 FTSA) (25%), Perfluoroheptane sulfonic acid (PFHpS) (21%) and Perfluorononanoic acid (PFNA) (26%) do not meet DQOs. This not expected to affect the validity of the data as the exceedances are minor. As a conservative measure, the highest reported values will be adopted for interpretive use.

ALS: FD RPDs between samples 0229_MW120_241016 and 0229_QC103_241016 for 6:2 Fluorotelomer sulfonic acid (6:2 FTSA) (25%), Perfluoroheptane sulfonic acid (PFHpS) (21%) and Perfluorononanoic acid (PFNA) (26%) do not meet DQOs. This primarily due to results being at or below the LOR where RPDs can be magnified. As a conservative measure, the highest reported values will be adopted for interpretive use.

ALS & Eurofins: FT RPDs between samples 0229_MW135_241016 and 0229_QC200_241016 for Perfluorooctanoic Acid (PFOA) (100%), 6:2 Fluorotelomer sulfonic acid (6:2 FTSA) (46%) and Perfluorohexanoic acid (PFHxA) (86%) do not meet DQOs. This primarily due to results being at or below the LOR where RPDs can be magnified. As a conservative measure, the highest reported values will be adopted for interpretive use.

ALS & Eurofins: FT RPDs between samples 0229_MW106_241016 and 0229_QC201_241016 for Perfluorohexane sulfonic acid (PFHxS) (83%), Perfluorooctane sulfonic acid (PFOS) (67%), Sum of PFHxS and PFOS (lab reported) (76%), Sum of PFAS (90%), Perfluorobutane sulfonic acid (PFBS) (50%), Perfluorohexanoic acid (PFHxA) (67%) and Sum of WA DER PFAS (n=10) (85%) do not meet DQOs. This primarily due to results being at or below the LOR where RPDs can be magnified. As a conservative measure, the highest reported values will be adopted for interpretive use.

ALS & Eurofins: FT RPDs between samples 0229_MW105_241016 and 0229_QC202_241016 for Perfluorooctanoic Acid (PFOA) (44%), 6:2 Fluorotelomer sulfonic acid (6:2 FTSA) (51%), Perfluorobutane sulfonic acid (PFBS) (51%), Perfluorobutanoic acid (PFBA) (67%), Perfluoroheptane sulfonic acid (PFHpS) (29%), Perfluoroheptanoic acid (PFHpA) (57%), Perfluorononanoic acid (PFNA) (54%) and Perfluoropentane sulfonic acid (PFPeS) (50%) do not meet DQOs. This primarily due to results being at or below the LOR where RPDs can be magnified. As a conservative measure, the highest reported values will be adopted for interpretive use.

ALS & Eurofins: FT RPDs between samples 0229_MW120_241016 and 0229_QC203_241016 for Perfluorohexane sulfonic acid (PFHxS) (100%), Perfluorooctane sulfonic acid (PFOS) (153%), Sum of PFHxS and PFOS (lab reported) (146%), Sum of PFAS (141%), Perfluorohexanoic acid (PFHxA) (111%) and Sum of WA DER PFAS (n=10) (141%) do not meet DQOs. As a conservative measure, the highest reported values will be adopted for interpretive use.

ALS & Eurofins: FT RPDs between samples 0229_MW118_241016 and 0229_QC204_241016 for Sum of PFHxS and PFOS (lab reported) (67%) did not meet the DQO. This primarily due to results being at or below the LOR where RPDs can be magnified. As a conservative measure, the highest reported values will be adopted for interpretive use.

This batch has been validated and is considered suitable for environmental interpretive use.

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.

*When concentrations are less than the LOR for both primary and duplicate/triplicate results, no RPDs are calculated

Performed By:	[redacted]	**Checked By:**	[redacted]
Date:	**14/11/2024**	**Date:**	**18/11/2024**

Project : Defence - Lavarack Barracks, Townsville - Groundwater

Project Number: PS129286

Duplicate Analysis RPDs

Batch/es: EB2436463, EB2436460 / 1152910

Sample ID	0229_MW106_241016	0229_QC101_241016	0229_QC201_241016
Sample Type	Primary	Field Duplicate	Field Triplicate
Date Sampled	16/10/2024	16/10/2024	16/10/2024

Analyte Group	Unit	LOR				RPDs	
						Primary vs Duplicate	Primary vs Triplicate
Regulated PFAS Compounds							
Perfluorohexane sulfonic acid (PFHxS)	ug/L	0.01	0.07	0.07	0.17	0%	**83%**
Perfluorooctanoic Acid (PFOA)	ug/L	0.01	<0.01	<0.01	0.01	<50%	0%
Perfluorooctane sulfonic acid (PFOS)	ug/L	0.01	0.07	0.05	0.14	33%	**67%**
Sum of PFHxS and PFOS (lab reported)	ug/L	0.01	0.14	0.12	0.31	15%	**76%**
Sum of PFAS	ug/L	0.01	0.19	0.12	0.5	**45%**	**90%**
Other PFAS Compounds	ug/L	0.01					
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	ug/L	0.01	<0.05	<0.05	<0.01	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ug/L	0.05	<0.05	<0.05	<0.01	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ug/L	0.01	<0.05	<0.05	<0.05	<50%	<50%
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ug/L	0.05	<0.05	<0.05	<0.01	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	ug/L	0.02	<0.05	<0.05	<0.05	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	ug/L	0.05	<0.02	<0.02	<0.05	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	ug/L	0.02	<0.05	<0.05	<0.05	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	ug/L	0.01	<0.02	<0.02	<0.05	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	ug/L	0.05	0.03	<0.04	0.05	<50%	**50%**
Perfluorobutanoic acid (PFBA)	ug/L	0.01	<0.1	<0.1	0.06	<50%	<50%
Perfluorodecane sulfonic acid (PFDS)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorodecanoic acid (PFDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroheptanoic acid (PFHpA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorohexanoic acid (PFHxA)	ug/L	0.01	0.02	<0.04	0.04	**67%**	**67%**
Perfluorononanoic acid (PFNA)	ug/L	0.02	<0.02	<0.02	<0.01	<50%	<50%
Perfluorooctane sulfonamide (FOSA)	ug/L	0.01	<0.02	<0.02	<0.05	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	ug/L	0.01	<0.02	<0.02	0.02	<50%	0%
Perfluoropentanoic acid (PFPeA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorotetradecanoic acid (PFTeDA)	ug/L	0.01	<0.05	<0.05	<0.01	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroundecanoic acid (PFUnDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	1	0.19	0.12	0.47	**45%**	**85%**

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs: Analysis result < 10 times LOR: 40%

Analysis result ≥ 10 times LOR: 20%

Project : Defence - Lavarack Barracks, Townsville - Groundwater

Project Number: PS129286
Duplicate Analysis RPDs
Batch/es: EB2436463, EB2436460 / 1152910

Sample ID	**0229_MW135_241016**	**0229_QC100_241016**	**0229_QC200_241016**
Sample Type	Primary	Field Duplicate	Field Triplicate
Date Sampled	16/10/2024	16/10/2024	16/10/2024

Analyte Group	Unit	LOR				RPDs	
						Primary vs Duplicate	**Primary vs Triplicate**
Regulated PFAS Compounds							
Perfluorohexane sulfonic acid (PFHxS)	ug/L	0.01	0.47	0.48	0.46	2%	2%
Perfluorooctanoic Acid (PFOA)	ug/L	0.01	0.01	<0.04	0.03	**120%**	**100%**
Perfluorooctane sulfonic acid (PFOS)	ug/L	0.01	0.21	0.19	0.18	10%	15%
Sum of PFHxS and PFOS (lab reported)	ug/L	0.01	0.68	0.67	0.64	1%	6%
Sum of PFAS	ug/L	0.01	0.85	0.79	0.97	7%	13%
Other PFAS Compounds	ug/L	0.01					
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	ug/L	0.01	<0.05	<0.05	<0.01	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ug/L	0.05	<0.05	<0.05	<0.01	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ug/L	0.01	<0.05	<0.05	0.08	<50%	**46%**
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ug/L	0.05	<0.05	<0.05	<0.01	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	ug/L	0.02	<0.05	<0.05	<0.05	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	ug/L	0.05	<0.02	<0.02	<0.05	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	ug/L	0.02	<0.05	<0.05	<0.05	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	ug/L	0.01	<0.02	<0.02	<0.05	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	ug/L	0.05	0.08	0.07	0.06	13%	29%
Perfluorobutanoic acid (PFBA)	ug/L	0.01	<0.1	<0.1	<0.05	<50%	<50%
Perfluorodecane sulfonic acid (PFDS)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorodecanoic acid (PFDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	ug/L	0.01	0.02	<0.04	0.03	**67%**	40%
Perfluoroheptanoic acid (PFHpA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorohexanoic acid (PFHxA)	ug/L	0.01	<0.02	<0.02	0.05	<50%	**86%**
Perfluorononanoic acid (PFNA)	ug/L	0.02	<0.02	<0.02	<0.01	<50%	<50%
Perfluorooctane sulfonamide (FOSA)	ug/L	0.01	<0.02	<0.02	<0.05	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	ug/L	0.01	0.06	0.05	0.05	18%	18%
Perfluoropentanoic acid (PFPeA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorotetradecanoic acid (PFTeDA)	ug/L	0.01	<0.05	<0.05	<0.01	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroundecanoic acid (PFUnDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	1	0.77	0.74	0.86	4%	11%

Legend
ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)
- = Not analysed/calculated
Indicates RPD result does not meet the acceptable criteria
Acceptable RPDs: Analysis result < 10 times LOR: 40%
Analysis result ≥ 10 times LOR: 20%

Project : Defence - Lavarack Barracks, Townsville - Groundwater

Project Number: PS129286

Duplicate Analysis RPDs

Batch/es: EB2436463, EB2436460 / 1152910

Sample ID	0229_MW105_241016	0229_QC102_241016	0229_QC202_241016
Sample Type	Primary	Field Duplicate	Field Triplicate
Date Sampled	16/10/2024	16/10/2024	16/10/2024

Analyte Group	Unit	LOR				RPDs	
						Primary vs Duplicate	Primary vs Triplicate
Regulated PFAS Compounds							
Perfluorohexane sulfonic acid (PFHxS)	ug/L	0.01	57.7	51.9	65	11%	12%
Perfluorooctanoic Acid (PFOA)	ug/L	0.01	3.13	3.1	4.9	1%	**44%**
Perfluorooctane sulfonic acid (PFOS)	ug/L	0.01	31	27.4	26	12%	18%
Sum of PFHxS and PFOS (lab reported)	ug/L	0.01	88.7	79.3	91	11%	3%
Sum of PFAS	ug/L	0.01	136	123	162.62	10%	18%
Other PFAS Compounds	ug/L	0.01					
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	ug/L	0.01	<0.05	<0.25	<0.01	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ug/L	0.05	<0.05	<0.25	0.02	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ug/L	0.01	0.32	<0.25	0.19	**25%**	**51%**
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ug/L	0.05	<0.05	<0.25	0.07	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	ug/L	0.05	<0.12	<0.62	<0.05	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	ug/L	0.02	<0.12	<0.62	<0.05	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	ug/L	0.05	<0.05	<0.25	<0.05	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	ug/L	0.05	<0.12	<0.62	<0.05	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	ug/L	0.02	<0.12	<0.62	<0.05	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	ug/L	0.01	<0.05	<0.25	<0.05	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	ug/L	0.05	8.33	6.86	14	19%	**51%**
Perfluorobutanoic acid (PFBA)	ug/L	0.01	1.2	<1.2	2.4	0%	**67%**
Perfluorodecane sulfonic acid (PFDS)	ug/L	0.01	<0.05	<0.25	<0.1	<50%	<50%
Perfluorodecanoic acid (PFDA)	ug/L	0.01	<0.05	<0.25	<0.01	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	ug/L	0.01	<0.05	<0.25	<0.01	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	ug/L	0.01	1.8	2.23	2.4	**21%**	**29%**
Perfluoroheptanoic acid (PFHpA)	ug/L	0.01	1.56	1.8	2.8	14%	**57%**
Perfluorohexanoic acid (PFHxA)	ug/L	0.01	18.3	19.6	18	7%	2%
Perfluorononanoic acid (PFNA)	ug/L	0.02	0.27	0.35	0.47	**26%**	**54%**
Perfluorooctane sulfonamide (FOSA)	ug/L	0.01	<0.05	<0.25	0.07	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	ug/L	0.01	8.96	6.83	15	27%	**50%**
Perfluoropentanoic acid (PFPeA)	ug/L	0.01	3.28	3.2	4.2	2%	25%
Perfluorotetradecanoic acid (PFTeDA)	ug/L	0.01	<0.12	<0.62	<0.01	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	ug/L	0.01	<0.05	<0.25	<0.01	<50%	<50%
Perfluoroundecanoic acid (PFUnDA)	ug/L	0.01	<0.05	<0.25	<0.01	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	1	125	114	137.56	9%	10%

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs:

Analysis result < 10 times LOR: any RPD

Analysis result ≥ 10 times LOR and < 20 times LOR: RPD ≤ 50%

Analysis result ≥ 20 times LOR: RPD ≤ 30%

Project : Defence - Lavarack Barracks, Townsville - Groundwater

Project Number: PS129286

Duplicate Analysis RPDs

Batch/es: EB2436463, EB2436460 / 1152910

Sample ID	0229_MW120_241016	0229_QC103_241016	0229_QC203_241016
Sample Type	Primary	Field Duplicate	Field Triplicate
Date Sampled	16/10/2024	16/10/2024	16/10/2024

Analyte Group	Unit	LOR				RPDs	
						Primary vs Duplicate	Primary vs Triplicate
Regulated PFAS Compounds							
Perfluorohexane sulfonic acid (PFHxS)	ug/L	0.01	0.02	0.04	0.06	**67%**	**100%**
Perfluorooctanoic Acid (PFOA)	ug/L	0.01	<0.01	<0.01	0.02	<50%	<50%
Perfluorooctane sulfonic acid (PFOS)	ug/L	0.01	0.07	0.06	0.52	15%	**153%**
Sum of PFHxS and PFOS (lab reported)	ug/L	0.01	0.09	0.1	0.58	11%	**146%**
Sum of PFAS	ug/L	0.01	0.12	0.14	0.69	15%	**141%**
Other PFAS Compounds	ug/L	0.01					
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	ug/L	0.01	<0.05	<0.05	<0.01	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ug/L	0.05	<0.05	<0.05	<0.01	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ug/L	0.01	<0.05	<0.05	<0.05	<50%	<50%
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ug/L	0.05	<0.05	<0.05	<0.01	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	ug/L	0.02	<0.05	<0.05	<0.05	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	ug/L	0.05	<0.02	<0.02	<0.05	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	ug/L	0.02	<0.05	<0.05	<0.05	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	ug/L	0.01	<0.02	<0.02	<0.05	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	ug/L	0.05	0.03	0.04	0.02	29%	40%
Perfluorobutanoic acid (PFBA)	ug/L	0.01	<0.1	<0.1	<0.05	<50%	<50%
Perfluorodecane sulfonic acid (PFDS)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorodecanoic acid (PFDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroheptanoic acid (PFHpA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorohexanoic acid (PFHxA)	ug/L	0.01	<0.02	<0.02	0.07	<50%	**111%**
Perfluorononanoic acid (PFNA)	ug/L	0.02	<0.02	<0.02	<0.01	<50%	<50%
Perfluorooctane sulfonamide (FOSA)	ug/L	0.01	<0.02	<0.02	<0.05	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoropentanoic acid (PFPeA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorotetradecanoic acid (PFTeDA)	ug/L	0.01	<0.05	<0.05	<0.01	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroundecanoic acid (PFUnDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	1	0.12	0.14	0.69	15%	**141%**

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs: Analysis result < 10 times LOR: 40%

Analysis result ≥ 10 times LOR: 20%

Project : Defence - Lavarack Barracks, Townsville - Groundwater

Project Number: PS129286

Duplicate Analysis RPDs

Batch/es: EB2436463, EB2436460 / 1152910

Analyte Group	Unit	LOR	Sample ID	0229_MW118_241016	0229_QC104_241016	0229_QC204_241016	RPDs	
			Sample Type	Primary	Field Duplicate	Field Triplicate	Primary vs Duplicate	Primary vs Triplicate
			Date Sampled	16/10/2024	16/10/2024	16/10/2024		
Regulated PFAS Compounds								
Perfluorohexane sulfonic acid (PFHxS)	ug/L	0.01		0.03	0.02	0.04	40%	29%
Perfluorooctanoic Acid (PFOA)	ug/L	0.01		<0.01	<0.01	<0.01	<50%	<50%
Perfluorooctane sulfonic acid (PFOS)	ug/L	0.01		<0.01	0.01	0.02	0%	<50%
Sum of PFHxS and PFOS (lab reported)	ug/L	0.01		0.03	0.03	0.06	0%	**67%**
Sum of PFAS	ug/L	0.01		0.1	0.1	0.12	0%	18%
Other PFAS Compounds	ug/L	0.01						
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	ug/L	0.01		<0.05	<0.05	<0.01	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ug/L	0.05		<0.05	<0.05	<0.01	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ug/L	0.01		<0.05	<0.05	<0.05	<50%	<50%
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ug/L	0.05		<0.05	<0.05	<0.01	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	ug/L	0.05		<0.05	<0.05	<0.05	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	ug/L	0.02		<0.05	<0.05	<0.05	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	ug/L	0.05		<0.02	<0.02	<0.05	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	ug/L	0.05		<0.05	<0.05	<0.05	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	ug/L	0.02		<0.05	<0.05	<0.05	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	ug/L	0.01		<0.02	<0.02	<0.05	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	ug/L	0.05		0.07	0.07	0.05	0%	33%
Perfluorobutanoic acid (PFBA)	ug/L	0.01		<0.1	<0.1	<0.05	<50%	<50%
Perfluorodecane sulfonic acid (PFDS)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Perfluorodecanoic acid (PFDA)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Perfluoroheptanoic acid (PFHpA)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Perfluorohexanoic acid (PFHxA)	ug/L	0.01		<0.02	<0.02	0.01	<50%	0%
Perfluorononanoic acid (PFNA)	ug/L	0.02		<0.02	<0.02	<0.01	<50%	<50%
Perfluorooctane sulfonamide (FOSA)	ug/L	0.01		<0.02	<0.02	<0.05	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Perfluoropentanoic acid (PFPeA)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Perfluorotetradecanoic acid (PFTeDA)	ug/L	0.01		<0.05	<0.05	<0.01	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Perfluoroundecanoic acid (PFUnDA)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	1		0.1	0.1	0.12	0%	18%

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs: Analysis result < 10 times LOR: 40%

Analysis result ≥ 10 times LOR: 20%

DATA VALIDATION SUMMARY SHEET

Project Name:	**Defence - Lavarack Barracks, Townsville - Surface Water and Sediment**	**Project Number:**	**PS129286**
Primary Laboratory:	**ALS Brisbane**	**Work Order Number:**	**EB2434985, EB2435708, EB2434987**
Secondary Laboratory:	**Eurofins Brisbane**	**Work Order Number:**	**1148384, 1152729**
Date Sampled:	**8/10/2024-15/10/2024**	**Sample Medium:**	**Surface Water and Sediment**

Sample Information

Number of Primary Samples:	**EB2435708, 4 from EB2434987)**	**Number of Triplicate Samples:**	**8**
Number of Duplicate Samples:	**8**	**Number of Other QAQC Samples:**	**1**

Documentation and Sample Handling Information

	Y/N	Comments
COC completed properly?	Y	Signed by field staff and laboratory personnel.
All requested analysis completed?	Y	All requested analyses on the COC performed by ALS & Eurofins.
Samples received intact and chilled?	Y	ALS: 1.9'C - 5.7'C, ice bricks present and security seal intact. Eurofins: Attempt to chill was evident, samples received in good order
Samples analysed within appropriate holding times?	Y	All samples were analysed within appropriate holding times (ALS & Eurofins).
Sample volumes sufficient for QC analysis?	N	Sufficient sample volume was provided for all laboratory tests. It is noted that the DUP and MS analysis rate in water for ALS was less than the quality control specification.
Are there non-NATA accredited methods used?	Y	ALS are NATA accredited for all methods used in this batch. Eurofins is not NATA accredited for PFAS summations - it is accredited for the individual analytes. All other methods used in this batch are NATA accredited.
Chromatograms supplied as appropriate?	N/A	N/A.
Laboratory reports signed by authorised personnel?	Y	All reports signed.

QAQC Sample Information (Method Blank - MB, Rinsate Blank - RB, Field Blank - FB, Trip Blank - TB)

Type	Sample ID	Comments
MB	Method Blank	All results were below the LOR
TB	0229_QC500_241009	All results were below the LOR

Laboratory Control Spike (LCS) Analyses

Analyte Group	Comments
All	All LCS recoveries are within the laboratory based DQOs (ALS & Eurofins).

Matrix Spike (MS) Analyses

Analyte Group	Comments
(n:2) Fluorotelomer Sulfonic Acids	ALS: The MS recovery for 0:2 Fluorotelomer sulfonic acid (10:2 FTS) (150 %) for sample 0229_SD245_241015 was outside DQOs (54.8-124%). *Refer to overall comments.*
EP231A: Perfluoroalkyl Sulfonic Acids	ALS: The MS recovery for Perfluorohexane sulfonic acid (PFHxS) (56.2 %) for sample 0229_SD220_241008 was outside DQOs (67.0-130%). The MS recovery for PFOS, PFHpS, PFHxS, PFPeS and PFBS was not determined in sample 0229_SD121_241009. *Refer to overall comments* .
EP231B: Perfluoroalkyl Carboxylic Acids	ALS: The MS recovery for 0:2 Fluorotelomer sulfonic acid (10:2 FTS) (150 %) for sample 0229_SD220_241008 was outside DQOs (66.0-139%). The MS recovery for PFNA, PFOA, PFHpA, PFHxA, PFPeA was not determined in sample 0229_SD121_241009. *Refer to overall comments* .
P231C: Perfluoroalkyl Sulfonamides	ALS: The MS recovery for MeFOSAA (172 %) for sample 0229_SD220_241008 was outside DQOs (63.0-144%). The MS recovery for EtFOSAA (159 %) for sample 0229_SD220_241008 are outside DQOs (61.0-139%). *Refer to overall comments* .
-	All other MS recoveries were acceptable.(Eurofins & ALS).

Laboratory Duplicates (LD) Analyses

Analyte Group	Sample ID	Comments
-	-	All LD RPDs are within the laboratory based DQOs for sediment (ALS & Eurofins).

Field Duplicates (FD) Analyses

Analyte Group	Primary ID	Duplicate ID	Comments
PFAS (WATER)	0229_SW242_241008	0229_QC100_241008	FD RPDs for Perfluorohexane sulfonic acid (PFHxS) (67%) and Perfluorooctane sulfonic acid (PFOS) (164%) do not meet DQOs (*Refer to overall comments*).
PFAS (WATER)	0229_SW139_241009	0229_QC101_241009	FD RPDs for Perfluorooctane sulfonic acid (PFOS) (33%), Sum of PFHxS and PFOS (lab reported) (25%), and Sum of PFAS (25%) do not meet DQOs (*Refer to overall comments*).
PFAS (SEDIMENT)	0229_SD242_241008	0229_QC100_241008	FD RPDs for Perfluorohexane sulfonic acid (PFHxS) (100%), Perfluorooctane sulfonic acid (PFOS) (26%), Sum of PFHxS and PFOS (lab reported) (41%), Sum of PFAS (41%) and Sum of WA DER PFAS (n=10) (41%) do not meet DQOs (*Refer to overall comments*).
PFAS (SEDIMENT)	0229_SD139_241009	0229_QC101_241009	FD RPDs for Perfluorohexane sulfonic acid (PFHxS) (39%), Perfluorobutane sulfonic acid (PFBS) (55%), Perfluorodecane sulfonic acid (PFDS) (67%), Perfluorohexanoic acid (PFHxA) (55%), Perfluoropentane sulfonic acid (PFPeS) (74%) and Perfluorotridecanoic acid (PFTrDA) (108%) do not meet DQOs (*Refer to overall comments*).
-	-	-	All other FD RPDs are within DQOs.

Field Triplicates (FT) Analyses

Analyte Group	Primary ID	Triplicate ID	Comments
PFAS (WATER)	0229_SW242_241008	0229_QC200_241008	FT RPDs for Perfluorohexane sulfonic acid (PFHxS) (67%), Perfluorooctane sulfonic acid (PFOS) (62%), Sum of PFHxS and PFOS (lab reported) (63%), Sum of PFAS (74%), Sum of WA DER PFAS (n=10) (74%) do not meet DQOs (*Refer to overall comments*).
PFAS (WATER)	0229_SW139_241009	0229_QC201_241009	FT RPDs for Perfluorohexane sulfonic acid (PFHxS) (27%), Perfluorobutanoic acid (PFBA) (67%), Perfluoroheptane sulfonic acid (PFHpS) (32%) and Perfluoropentane sulfonic acid (PFPeS) (22%) do not meet DQOs (*Refer to overall comments*).
PFAS (WATER)	0229_SW140_241009	0229_QC202_241009	FT RPDs for Perfluorohexane sulfonic acid (PFHxS) (95%), Perfluorooctanoic Acid (PFOA) (72%), Perfluorooctane sulfonic acid (PFOS) (79%), Sum of PFHxS and PFOS (lab reported) (86%), Sum of PFAS (81%), Perfluorobutane sulfonic acid (PFBS) (47%), Perfluoroheptane sulfonic acid (PFHpS) (104%), Perfluoroheptanoic acid (PFHpA) (77%), Perfluorohexanoic acid (PFHxA) (68%), Perfluoropentane sulfonic acid (PFPeS) (69%), Perfluoropentanoic acid (PFPeA) (96%) and Sum of WA DER PFAS (n=10) (81%) do not meet DQOs (*Refer to overall comments*).
PFAS (SEDIMENT)	0229_SD242_241008	0229_QC200_241008	FT RPDs for Perfluorohexane sulfonic acid (PFHxS) (157%), Perfluorooctanoic Acid (PFOA) (177%), Perfluorooctane sulfonic acid (PFOS) (35%), Sum of PFAS (168%) and Sum of WA DER PFAS (n=10) (78%) do not meet DQOs (*Refer to overall comments*).
PFAS (SEDIMENT)	0229_SD139_241009	0229_QC201_241009	FT RPDs for Perfluorohexane sulfonic acid (PFHxS) (63%), Perfluorooctanoic Acid (PFOA) (164%), Perfluorooctane sulfonic acid (PFOS) (121%), Sum of PFHxS and PFOS (lab reported) (129%), Sum of PFAS (50%), Perfluorobutane sulfonic acid (PFBS) (113%), Perfluorohexanoic acid (PFHxA) (113%), Perfluoropentane sulfonic acid (PFPeS) (117%), Perfluoropentanoic acid (PFPeA) (177%), and Sum of WA DER PFAS (n=10) (131%) do not meet DQOs (*Refer to overall comments*).

DATA VALIDATION SUMMARY SHEET

Project Name:	**Defence - Lavarack Barracks, Townsville - Surface Water and Sediment**	**Project Number:**	**PS129286**
Primary Laboratory:	**ALS Brisbane**	**Work Order Number:**	**EB2434985, EB2435708, EB2434987**
Secondary Laboratory:	**Eurofins Brisbane**	**Work Order Number:**	**1148384, 1152729**
Date Sampled:	**8/10/2024-15/10/2024**	**Sample Medium:**	**Surface Water and Sediment**

PFAS (SEDIMENT)	0229_SD140_241009	0229_QC202_241008	FT RPDs for Perfluorohexane sulfonic acid (PFHxS) (50%), Perfluorooctanoic Acid (PFOA) (185%), Perfluorooctane sulfonic acid (PFOS) (132%), Sum of PFHxS and PFOS (lab reported) (138%), Sum of PFAS (51%), Perfluorobutane sulfonic acid (PFBS) (177%), Perfluorodecane sulfonic acid (PFDS) (151%), Perfluoroheptane sulfonic acid (PFHpS) (170%), Perfluorohexanoic acid (PFHxA) (170%), Perfluoropentane sulfonic acid (PFPeS) (177%) and Sum of WA DER PFAS (n=10) (74%) do not meet DQOs (*Refer to overall comments*).
-	-	-	All other FT RPDs are within DQOs.

Surrogate Compound Monitoring Analyses

Analyte Group	Analyte(s)	Comments
-	-	All surrogate recoveries are within acceptable DQOs (Eurofins & ALS).

Overall Comments

ALS: The MS recovery for PFOS, PFHpS, PFHxS, PFPeS, PFBS, PFNA, PFOA, PFHpA, PFHxA and PFPeA was not determined in sample 0229_SD121_241009. ALS stated that the recovery was not determined as the background level was ≥4x spike level. This should be considered when interpretating the data.

ALS: The MS recovery for 0:2 Fluorotelomer sulfonic acid (10:2 FTS) (150 %) for sample 0229_SD245_241015 was outside DQOs (54.8-124%), indicating the potential for over-reporting. This should be considered when interpreting the data.

ALS: The MS recovery for Perfluorohexane sulfonic acid (PFHxS) (56.2 %) for sample 0229_SD220_241008 was outside DQOs (67.0-130%), indicating the potential for under reporting. This should be considered when interpreting the data.

ALS: The MS recovery for 0:2 Fluorotelomer sulfonic acid (10:2 FTS) (150 %) for sample 0229_SD220_241008 was outside DQOs (66.0-139%), indicating the potential for over-reporting. This should be considered when interpreting the data.

ALS: The MS recovery for MeFOSAA (172 %) and EtFOSAA (159 %) for sample 0229_SD220_241008 was outside DQOs (63.0-144% and 61.0-139% respectively), indicating the potential for over-reporting. This should be considered when interpreting the data.

ALS: FD RPDs between SW samples 0229_SW242_241008 and 0229_QC100_241008 for Perfluorohexane sulfonic acid (PFHxS) (67%) and Perfluorooctane sulfonic acid (PFOS) (164%) do not meet DQOs. This primarily due to results being near or below the LOR where RPDs can be magnified. As a conservative measure, the highest reported values will be adopted for interpretive use.

ALS: FD RPDs between SW samples 0229_SW139_241009 and 0229_QC101_241009 for Perfluorooctane sulfonic acid (PFOS) (33%), Sum of PFHxS and PFOS (lab reported) (25%), and Sum of PFAS (25%) do not meet DQOs. This is not expected to affect the validity of the results as the exceedances were minor. As a conservative measure, the highest reported values will be adopted for interpretive use.

ALS: FD RPDs between SEDIMENT samples 0229_SD242_241008 and 0229_QC100_241008 for Perfluorohexane sulfonic acid (PFHxS) (100%), Perfluorooctane sulfonic acid (PFOS) (26%), Sum of PFHxS and PFOS (lab reported) (41%), Sum of PFAS (41%) and Sum of WA DER PFAS (n=10) (41%) do not meet DQOs. As a conservative measure, the highest reported values will be adopted for interpretive use.

ALS: FD RPDs between SEDIMENT samples 0229_SD139_241009 and 0229_QC101_241009 for Perfluorohexane sulfonic acid (PFHxS) (39%), Perfluorobutane sulfonic acid (PFBS) (55%), Perfluorodecane sulfonic acid (PFDS) (67%), Perfluorohexanoic acid (PFHxA) (55%), Perfluoropentane sulfonic acid (PFPeS) (74%) and Perfluorotridecanoic acid (PFTrDA) (108%) do not meet DQOs. As a conservative measure, the highest reported values will be adopted for interpretive use.

Eurofins: FT RPDs between SW samples 0229_SW242_241008 and 0229_QC200_241008 for Perfluorohexane sulfonic acid (PFHxS) (67%), Perfluorooctane sulfonic acid (PFOS) (62%), Sum of PFHxS and PFOS (lab reported) (63%), Sum of PFAS (74%), Sum of WA DER PFAS (n=10) (74%) do not meet DQOs. As a conservative measure, the highest reported values will be adopted for interpretive use.

Eurofins: FT RPDs between SW samples 0229_SW139_241009 and 0229_QC201_241009 for Perfluorohexane sulfonic acid (PFHxS) (27%), Perfluorobutanoic acid (PFBA) (67%), Perfluoroheptane sulfonic acid (PFHpS) (32%) and Perfluoropentane sulfonic acid (PFPeS) (22%) do not meet DQOs. As a conservative measure, the highest reported values will be adopted for interpretive use.

Eurofins: FT RPDs between SW samples 0229_SW140_241009 and 0229_QC202_241009 for Perfluorohexane sulfonic acid (PFHxS) (95%), Perfluorooctanoic Acid (PFOA) (72%), Perfluorooctane sulfonic acid (PFOS) (79%), Sum of PFHxS and PFOS (lab reported) (86%), Sum of PFAS (81%), Perfluorobutane sulfonic acid (PFBS) (47%), Perfluoroheptane sulfonic acid (PFHpS) (104%), Perfluoroheptanoic acid (PFHpA) (77%), Perfluorohexanoic acid (PFHxA) (68%), Perfluoropentane sulfonic acid (PFPeS) (69%), Perfluoropentanoic acid (PFPeA) (96%) and Sum of WA DER PFAS (n=10) (81%) do not meet DQOs. As a conservative measure, the highest reported values will be adopted for interpretive use.

Eurofins: FT RPDs between SEDIMENT samples 0229_SD242_241008 and 0229_QC200_241008 for Perfluorohexane sulfonic acid (PFHxS) (157%), Perfluorooctanoic Acid (PFOA) (177%), Perfluorooctane sulfonic acid (PFOS) (35%), Sum of PFAS (168%) and Sum of WA DER PFAS (n=10) (78%) do not meet DQOs. This primarily due to results being near or below the LOR where RPDs can be magnified. As a conservative measure, the highest reported values will be adopted for interpretive use.

Eurofins: FT RPDs between SEDIMENT samples 0229_SD139_241009 and 0229_QC201_241009 for Perfluorohexane sulfonic acid (PFHxS) (63%), Perfluorooctanoic Acid (PFOA) (164%), Perfluorooctane sulfonic acid (PFOS) (121%), Sum of PFHxS and PFOS (lab reported) (129%), Sum of PFAS (50%), Perfluorobutane sulfonic acid (PFBS) (113%), Perfluorohexanoic acid (PFHxA) (113%), Perfluoropentane sulfonic acid (PFPeS) (117%), Perfluoropentanoic acid (PFPeA) (177%), and Sum of WA DER PFAS (n=10) (131%) do not meet DQOs. As a conservative measure, the highest reported values will be adopted for interpretive use.

Eurofins: FT RPDs between SEDIMENT samples 0229_SD140_241009 and 0229_QC202_241009 for Perfluorohexane sulfonic acid (PFHxS) (50%), Perfluorooctanoic Acid (PFOA) (185%), Perfluorooctane sulfonic acid (PFOS) (132%), Sum of PFHxS and PFOS (lab reported) (138%), Sum of PFAS (51%), Perfluorobutane sulfonic acid (PFBS) (177%), Perfluorodecane sulfonic acid (PFDS) (151%), Perfluoroheptane sulfonic acid (PFHpS) (170%), Perfluorohexanoic acid (PFHxA) (170%), Perfluoropentane sulfonic acid (PFPeS) (177%) and Sum of WA DER PFAS (n=10) (74%) do not meet DQOs. As a conservative measure, the highest reported values will be adopted for interpretive use.

This batch has been validated and is considered suitable for environmental interpretive use.

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.

*When concentrations are less than the LOR for both primary and duplicate/triplicate results, no RPDs are calculated

Performed By:	[redacted]	**Checked By:**	[redacted]
Date:	**14/11/2024**	**Date:**	**18/11/2024**

Project : Defence - Lavarack Barracks, Townsville - Surface Water and Sediment

Project Number: PS129286

Duplicate Analysis RPDs

Batch/es: EB2434985, EB2435708, EB2434987 / 1148384, 1152729

Sample ID	**0229_SW242_241008**	**0229_QC100_241008**	**0229_QC200_241008**	
Sample Type	Primary	Field Duplicate	Field Triplicate	
Date Sampled	8/10/2024	8/10/2024	8/10/2024	

						RPDs	
Analyte Group	**Unit**	**LOR**				**Primary vs Duplicate**	**Primary vs Triplicate**
Regulated PFAS Compounds							
Perfluorohexane sulfonic acid (PFHxS)	ug/L	0.01	0.02	0.01	0.04	**67%**	**67%**
Perfluorooctanoic Acid (PFOA)	ug/L	0.01	<0.01	<0.01	<0.01	<50%	<50%
Perfluorooctane sulfonic acid (PFOS)	ug/L	0.01	0.09	0.1	0.17	**164%**	**62%**
Sum of PFHxS and PFOS (lab reported)	ug/L	0.01	0.11	0.11	0.21	0%	**63%**
Sum of PFAS	ug/L	0.01	0.11	0.11	0.24	0%	**74%**
Other PFAS Compounds							
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	ug/L	0.01	<0.05	<0.05	<0.01	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ug/L	0.05	<0.05	<0.05	<0.01	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ug/L	0.01	<0.05	<0.05	<0.05	<50%	<50%
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ug/L	0.05	<0.05	<0.05	<0.01	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	ug/L	0.02	<0.05	<0.05	<0.05	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	ug/L	0.05	<0.02	<0.02	<0.05	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	ug/L	0.02	<0.05	<0.05	<0.05	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	ug/L	0.01	<0.02	<0.02	<0.05	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	ug/L	0.05	<0.02	<0.02	0.01	<50%	<50%
Perfluorobutanoic acid (PFBA)	ug/L	0.01	<0.1	<0.1	<0.05	<50%	<50%
Perfluorodecane sulfonic acid (PFDS)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorodecanoic acid (PFDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroheptanoic acid (PFHpA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorohexanoic acid (PFHxA)	ug/L	0.01	<0.02	<0.02	0.02	<50%	0%
Perfluorononanoic acid (PFNA)	ug/L	0.02	<0.02	<0.02	<0.01	<50%	<50%
Perfluorooctane sulfonamide (FOSA)	ug/L	0.01	<0.02	<0.02	<0.05	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoropentanoic acid (PFPeA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorotetradecanoic acid (PFTeDA)	ug/L	0.01	<0.05	<0.05	<0.01	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroundecanoic acid (PFUnDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	1	0.11	0.11	0.24	0%	**74%**

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs:

Analysis result < 10 times LOR: any RPD

Analysis result ≥ 10 times LOR and < 20 times LOR: RPD ≤ 50%

Analysis result ≥ 20 times LOR: RPD ≤ 30%

Project : Defence - Lavarack Barracks, Townsville - Surface Water and Sediment

Project Number: PS129286

Duplicate Analysis RPDs

Batch/es: EB2434985, EB2435708, EB2434987 / 1148384, 1152729

Sample ID	**0229_SW139_241009**	**0229_QC101_241009**	**0229_QC201_241009**	
Sample Type	Primary	Field Duplicate	Field Triplicate	
Date Sampled	9/10/2024	9/10/2024	9/10/2024	

						RPDs	
Analyte Group	**Unit**	**LOR**				**Primary vs Duplicate**	**Primary vs Triplicate**
Regulated PFAS Compounds							
Perfluorohexane sulfonic acid (PFHxS)	ug/L	0.01	1.29	1.12	1.7	14%	**27%**
Perfluorooctanoic Acid (PFOA)	ug/L	0.01	0.09	0.08	0.09	12%	0%
Perfluorooctane sulfonic acid (PFOS)	ug/L	0.01	1.73	1.24	1.7	**33%**	2%
Sum of PFHxS and PFOS (lab reported)	ug/L	0.01	3.02	2.36	3.4	**25%**	12%
Sum of PFAS	ug/L	0.01	4.14	3.22	4.59	**25%**	10%
Other PFAS Compounds							
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	ug/L	0.01	<0.05	<0.05	<0.01	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ug/L	0.05	<0.05	<0.05	<0.01	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ug/L	0.01	<0.05	<0.05	<0.05	<50%	<50%
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ug/L	0.05	<0.05	<0.05	<0.01	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	ug/L	0.02	<0.05	<0.05	<0.05	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	ug/L	0.05	<0.02	<0.02	<0.05	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	ug/L	0.02	<0.05	<0.05	<0.05	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	ug/L	0.01	<0.02	<0.02	<0.05	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	ug/L	0.05	0.23	0.16	0.2	36%	14%
Perfluorobutanoic acid (PFBA)	ug/L	0.01	<0.1	<0.1	0.05	<50%	**67%**
Perfluorodecane sulfonic acid (PFDS)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorodecanoic acid (PFDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	ug/L	0.01	0.08	0.06	0.11	29%	**32%**
Perfluoroheptanoic acid (PFHpA)	ug/L	0.01	0.04	0.04	0.05	0%	22%
Perfluorohexanoic acid (PFHxA)	ug/L	0.01	0.36	0.31	0.39	15%	8%
Perfluorononanoic acid (PFNA)	ug/L	0.02	<0.02	<0.02	<0.01	<50%	<50%
Perfluorooctane sulfonamide (FOSA)	ug/L	0.01	<0.02	<0.02	<0.05	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	ug/L	0.01	0.16	0.15	0.2	6%	**22%**
Perfluoropentanoic acid (PFPeA)	ug/L	0.01	0.08	0.06	<0.01	29%	<50%
Perfluorotetradecanoic acid (PFTeDA)	ug/L	0.01	<0.05	<0.05	<0.01	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Perfluoroundecanoic acid (PFUnDA)	ug/L	0.01	<0.02	<0.02	<0.01	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	1	3.82	3.01	4.18	24%	9%

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs:

Analysis result < 10 times LOR: any RPD

Analysis result ≥ 10 times LOR and < 20 times LOR: RPD ≤ 50%

Analysis result ≥ 20 times LOR: RPD ≤ 30%

Project : Defence - Lavarack Barracks, Townsville - Surface Water and Sediment

Project Number: PS129286

Duplicate Analysis RPDs

Batch/es: EB2434985, EB2435708, EB2434987 / 1148384, 1152729

Analyte Group	Unit	LOR	Sample ID	0229_SW140_241009	0229_QC102_241009	0229_QC202_241009	RPDs	
			Sample Type	Primary	Field Duplicate	Field Triplicate	Primary vs Duplicate	Primary vs Triplicate
			Date Sampled	9/10/2024	9/10/2024	9/10/2024		
Regulated PFAS Compounds								
Perfluorohexane sulfonic acid (PFHxS)	ug/L	0.01		1.11	0.99	3.1	11%	**95%**
Perfluorooctanoic Acid (PFOA)	ug/L	0.01		0.08	0.08	0.17	0%	**72%**
Perfluorooctane sulfonic acid (PFOS)	ug/L	0.01		1.52	1.24	3.5	20%	**79%**
Sum of PFHxS and PFOS (lab reported)	ug/L	0.01		2.63	2.23	6.6	16%	**86%**
Sum of PFAS	ug/L	0.01		3.64	3.02	8.61	19%	**81%**
Other PFAS Compounds								
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	ug/L	0.01		<0.05	<0.05	<0.01	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ug/L	0.05		<0.05	<0.05	<0.01	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ug/L	0.01		<0.05	<0.05	<0.05	<50%	<50%
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ug/L	0.05		<0.05	<0.05	<0.01	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	ug/L	0.05		<0.05	<0.05	<0.05	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	ug/L	0.02		<0.05	<0.05	<0.05	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	ug/L	0.05		<0.02	<0.02	<0.05	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	ug/L	0.05		<0.05	<0.05	<0.05	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	ug/L	0.02		<0.05	<0.05	<0.05	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	ug/L	0.01		<0.02	<0.02	<0.05	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	ug/L	0.05		0.21	0.14	0.34	40%	**47%**
Perfluorobutanoic acid (PFBA)	ug/L	0.01		<0.1	<0.1	0.1	<50%	0%
Perfluorodecane sulfonic acid (PFDS)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Perfluorodecanoic acid (PFDA)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	ug/L	0.01		0.06	0.06	0.19	0%	**104%**
Perfluoroheptanoic acid (PFHpA)	ug/L	0.01		0.04	0.03	0.09	29%	**77%**
Perfluorohexanoic acid (PFHxA)	ug/L	0.01		0.32	0.28	0.65	13%	**68%**
Perfluorononanoic acid (PFNA)	ug/L	0.02		<0.02	<0.02	<0.01	<50%	<50%
Perfluorooctane sulfonamide (FOSA)	ug/L	0.01		<0.02	<0.02	<0.05	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	ug/L	0.01		0.16	0.14	0.33	13%	**69%**
Perfluoropentanoic acid (PFPeA)	ug/L	0.01		0.07	0.06	<0.2	15%	**96%**
Perfluorotetradecanoic acid (PFTeDA)	ug/L	0.01		<0.05	<0.05	<0.01	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Perfluoroundecanoic acid (PFUnDA)	ug/L	0.01		<0.02	<0.02	<0.01	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	1		3.35	2.82	7.95	17%	**81%**

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs:

Analysis result < 10 times LOR: any RPD

Analysis result ≥ 10 times LOR and < 20 times LOR: RPD ≤ 50%

Analysis result ≥ 20 times LOR: RPD ≤ 30%

Project : Defence - Lavarack Barracks, Townsville - Surface Water and Sediment

Project Number: PS129286

Duplicate Analysis RPDs

Batch/es: EB2434985, EB2435708, EB2434987 / 1148384, 1152729

Sample ID	**0229_SW245_241015**	**0229_QC103_241015**	**0229_QC203_241009**	
Sample Type	Primary	Field Duplicate	Field Triplicate	
Date Sampled	15/10/2024	15/10/2024	15/10/2024	

Analyte Group	Unit	LOR				RPDs	
						Primary vs Duplicate	Primary vs Triplicate
Regulated PFAS Compounds							
Perfluorohexane sulfonic acid (PFHxS)	ug/L	0.01	<0.01	<0.01	<0.01	<50%	<50%
Perfluorooctanoic Acid (PFOA)	ug/L	0.01	<0.01	<0.01	<0.01	<50%	<50%
Perfluorooctane sulfonic acid (PFOS)	ug/L	0.01	0.02	0.02	0.03	0%	40%
Sum of PFHxS and PFOS (lab reported)	ug/L	0.01	0.02	0.02	0.03	0%	40%
Sum of PFAS	ug/L	0.01	0.02	0.02	0.03	0%	40%
Other PFAS Compounds							
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	ug/L	0.01	<0.05	<0.05	<0.05	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ug/L	0.01	<0.05	<0.05	<0.05	<50%	<50%
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	ug/L	0.02	<0.05	<0.05	<0.05	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	ug/L	0.05	<0.02	<0.02	<0.02	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	ug/L	0.05	<0.05	<0.05	<0.05	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	ug/L	0.02	<0.05	<0.05	<0.05	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	ug/L	0.01	<0.02	<0.02	<0.02	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	ug/L	0.05	<0.02	<0.02	<0.02	<50%	<50%
Perfluorobutanoic acid (PFBA)	ug/L	0.01	<0.1	<0.1	<0.1	<50%	<50%
Perfluorodecane sulfonic acid (PFDS)	ug/L	0.01	<0.02	<0.02	<0.02	<50%	<50%
Perfluorodecanoic acid (PFDA)	ug/L	0.01	<0.02	<0.02	<0.02	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	ug/L	0.01	<0.02	<0.02	<0.02	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	ug/L	0.01	<0.02	<0.02	<0.02	<50%	<50%
Perfluoroheptanoic acid (PFHpA)	ug/L	0.01	<0.02	<0.02	<0.02	<50%	<50%
Perfluorohexanoic acid (PFHxA)	ug/L	0.01	<0.02	<0.02	<0.02	<50%	<50%
Perfluorononanoic acid (PFNA)	ug/L	0.02	<0.02	<0.02	<0.02	<50%	<50%
Perfluorooctane sulfonamide (FOSA)	ug/L	0.01	<0.02	<0.02	<0.02	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	ug/L	0.01	<0.02	<0.02	<0.02	<50%	<50%
Perfluoropentanoic acid (PFPeA)	ug/L	0.01	<0.02	<0.02	<0.02	<50%	<50%
Perfluorotetradecanoic acid (PFTeDA)	ug/L	0.01	<0.05	<0.05	<0.05	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	ug/L	0.01	<0.02	<0.02	<0.02	<50%	<50%
Perfluoroundecanoic acid (PFUnDA)	ug/L	0.01	<0.02	<0.02	<0.02	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	1	0.02	0.02	0.03	0%	40%

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs:

Analysis result < 10 times LOR: any RPD

Analysis result ≥ 10 times LOR and < 20 times LOR: RPD ≤ 50%

Analysis result ≥ 20 times LOR: RPD ≤ 30%

Project : Defence - Lavarack Barracks, Townsville - Surface Water and Sediment

Project Number: PS129286

Duplicate Analysis RPDs

Batch/es: EB2434985, EB2435708, EB2434987 / 1148384, 1152729

Analyte Group	Unit	LOR	Sample ID	0229_SD242_241008	0229_QC100_241008	0229_QC200_241008	RPDs	
			Sample Type	Primary	Field Duplicate	Field Triplicate	Primary vs Duplicate	Primary vs Triplicate
			Date Sampled	8/10/2024	8/10/2024	8/10/2024		
Regulated PFAS Compounds								
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002		0.0006	<0.0002	<0.005	**100%**	**157%**
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0002		0.0003	0.0002	<0.005	40%	**177%**
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.0002		0.0035	0.0027	<0.005	**26%**	**35%**
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002		0.0041	0.0027	<0.005	**41%**	20%
Sum of PFAS	mg/kg	0.0002		0.0044	0.0029	<0.05	**41%**	**168%**
Other PFAS Compounds								
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	mg/kg	0.0005		<0.0005	<0.0005	<0.005	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005		<0.0005	<0.0005	<0.005	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	mg/kg	0.0005		<0.0005	<0.0005	<0.01	<50%	<50%
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	mg/kg	0.0005		<0.0005	<0.0005	<0.005	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	mg/kg	0.0005		<0.0005	<0.0005	<0.005	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	mg/kg	0.0005		<0.0005	<0.0005	<0.005	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.0002		<0.0002	<0.0002	<0.01	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	mg/kg	0.0005		<0.0005	<0.0005	<0.005	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	mg/kg	0.0005		<0.0005	<0.0005	<0.005	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	mg/kg	0.0002		<0.0002	<0.0002	<0.01	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorobutanoic acid (PFBA)	mg/kg	0.001		<0.001	<0.001	<0.005	<50%	<50%
Perfluorodecane sulfonic acid (PFDS)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorononanoic acid (PFNA)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005		<0.0005	<0.0005	<0.005	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.0002		<0.0002	<0.0002	<0.005	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	0.0002		0.0044	0.0029	<0.01	**41%**	**78%**

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs:

Analysis result < 10 times LOR: any RPD

Analysis result ≥ 10 times LOR and < 20 times LOR: RPD ≤ 50%

Analysis result ≥ 20 times LOR: RPD ≤ 30%

Project : Defence - Lavarack Barracks, Townsville - Surface Water and Sediment

Project Number: PS129286

Duplicate Analysis RPDs

Batch/es: EB2434985, EB2435708, EB2434987 / 1148384, 1152729

Sample ID	**0229_SD139_241009**	**0229_QC101_241009**	**0229_QC201_241009**	
Sample Type	Primary	Field Duplicate	Field Triplicate	
Date Sampled	8/10/2024	8/10/2024	8/10/2024	

						RPDs	
Analyte Group	**Unit**	**LOR**				**Primary vs Duplicate**	**Primary vs Triplicate**
Regulated PFAS Compounds							
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002	0.0096	0.0065	<0.005	**39%**	**63%**
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0002	0.0005	0.0004	<0.005	22%	**164%**
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.0002	0.0688	0.0625	0.017	10%	**121%**
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002	0.0784	0.069	0.017	13%	**129%**
Sum of PFAS	mg/kg	0.0002	0.0833	0.074	<0.05	12%	**50%**
Other PFAS Compounds							
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	mg/kg	0.0005	<0.0005	<0.0005	<0.01	<50%	<50%
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	mg/kg	0.0005	<0.0005	<0.0025	<0.005	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.0002	<0.0002	<0.0014	<0.01	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	mg/kg	0.0002	<0.0002	<0.0002	<0.01	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002	0.0014	0.0008	<0.005	**55%**	**113%**
Perfluorobutanoic acid (PFBA)	mg/kg	0.001	<0.001	<0.001	<0.005	<50%	<50%
Perfluorodecane sulfonic acid (PFDS)	mg/kg	0.0002	<0.0006	0.0003	<0.005	**67%**	<50%
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002	<0.0010	<0.0002	<0.005	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.0002	<0.0010	0.0011	<0.005	10%	<50%
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002	0.0014	0.0008	<0.005	**55%**	**113%**
Perfluorononanoic acid (PFNA)	mg/kg	0.0002	<0.0002	<0.0005	<0.005	<50%	<50%
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.0002	<0.0010	0.0007	<0.005	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.0002	0.0013	0.0006	<0.005	**74%**	**117%**
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002	0.0003	<0.0002	<0.005	40%	**177%**
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002	<0.0010	0.0003	<0.005	**108%**	<50%
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	0.0002	0.082	0.071	0.017	14%	**131%**

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs:

Analysis result < 10 times LOR: any RPD

Analysis result ≥ 10 times LOR and < 20 times LOR: RPD ≤ 50%

Analysis result ≥ 20 times LOR: RPD ≤ 30%

Project : Defence - Lavarack Barracks, Townsville - Surface Water and Sediment

Project Number: PS129286

Duplicate Analysis RPDs

Batch/es: EB2434985, EB2435708, EB2434987 / 1148384, 1152729

Sample ID	0229_SD140_241009	0229_QC102_241009	0229_QC202_241009
Sample Type	Primary	Field Duplicate	Field Triplicate
Date Sampled	9/10/2024	9/10/2024	9/10/2024

Analyte Group	Unit	LOR				RPDs	
						Primary vs Duplicate	Primary vs Triplicate
Regulated PFAS Compounds							
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002	0.003	0.0028	<0.005	7%	**50%**
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0002	0.0002	0.0002	<0.005	0%	**185%**
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.0002	0.0245	0.024	0.013	2%	**132%**
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002	0.0275	0.0268	0.013	3%	**138%**
Sum of PFAS	mg/kg	0.0002	0.0298	0.0286	<0.05	4%	**51%**
Other PFAS Compounds							
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	mg/kg	0.0005	<0.0005	<0.0005	<0.01	<50%	<50%
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	mg/kg	0.0005	<0.0005	<0.0012	<0.005	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.0002	<0.0002	<0.0002	<0.01	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	mg/kg	0.0002	<0.0002	<0.0002	<0.01	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002	0.0003	0.0003	<0.005	0%	**177%**
Perfluorobutanoic acid (PFBA)	mg/kg	0.001	<0.001	<0.001	<0.005	<50%	<50%
Perfluorodecane sulfonic acid (PFDS)	mg/kg	0.0002	0.0007	0.0005	<0.005	33%	**151%**
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.0002	0.0004	0.0003	<0.005	29%	**170%**
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002	0.0004	0.0003	<0.005	29%	**170%**
Perfluorononanoic acid (PFNA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.0002	0.0003	0.0002	<0.005	40%	**177%**
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	<50%	<50%
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005	<0.0005	<0.0005	<0.005	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	<50%	<50%
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.0002	<0.0002	<0.0002	<0.005	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	0.0002	0.0284	0.0276	0.013	3%	**74%**

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs:

Analysis result < 10 times LOR: any RPD

Analysis result ≥ 10 times LOR and < 20 times LOR: RPD ≤ 50%

Analysis result ≥ 20 times LOR: RPD ≤ 30%

Project : Defence - Lavarack Barracks, Townsville - Surface Water and Sediment

Project Number: PS129286

Duplicate Analysis RPDs

Batch/es: EB2434985, EB2435708, EB2434987 / 1148384, 1152729

Sample ID	0229_SD245_241015	0229_QC103_241015	0229_QC203_241015
Sample Type	Primary	Field Duplicate	Field Triplicate
Date Sampled	24/10/2024	24/10/2024	24/10/2024

Analyte Group	Unit	LOR				RPDs	
						Primary vs Duplicate	Primary vs Triplicate
Regulated PFAS Compounds							
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0002	<0.0002	<0.0010	<0.0002	<50%	<50%
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.0002	<0.0010	<0.0002	<0.0002	<50%	<50%
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Sum of PFAS	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Other PFAS Compounds							
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	mg/kg	0.0005	<0.0010	<0.0005	<0.0005	<50%	<50%
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<50%	<50%
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<50%	<50%
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	mg/kg	0.0005	<0.0010	<0.0005	<0.0005	<50%	<50%
N-Ethyl PFO sulfonamide (EtFOSA)	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<50%	<50%
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<50%	<50%
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.0002	<0.0002	<0.0010	<0.0010	<50%	<50%
N-Methyl PFO sulfonamide (MeFOSA)	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<50%	<50%
N-Methyl PFO sulfonamidoethanol (MeFOSE)	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<50%	<50%
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluorobutanoic acid (PFBA)	mg/kg	0.001	<0.001	<0.001	<0.001	<50%	<50%
Perfluorodecane sulfonic acid (PFDS)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.0002	<0.0020	<0.0023	<0.0031	<50%	<50%
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluorononanoic acid (PFNA)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<50%	<50%
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%
Sum of WA DER PFAS (n=10)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<50%	<50%

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs:

Analysis result < 10 times LOR: any RPD

Analysis result ≥ 10 times LOR and < 20 times LOR: RPD ≤ 50%

Analysis result ≥ 20 times LOR: RPD ≤ 30%

Appendix E

Calibration Certificates

Oil / Water Interface Meter

Instrument Interface Meter (60M)
Serial No. 485330

Air-Met Scientific Pty Ltd
[redacted]

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	8.37 V
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: 2/10/2024

Next calibration due: 1/12/2024

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 18J104321

Air-Met Scientific Pty Ltd
[redacted]

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. D.O		0 ppm		12111	0 ppm
2. Conductivity		2760uS		420141	2760uS
3. pH7		pH 7.00		413975	pH 7.00
4. pH4		pH 4.00		405966	pH 4.00
5. ORP mV		236.48		411371/409855	236.48
6. Temp °C		21.6		Temp901	21.6

Calibrated by: [redacted]

Calibration date: **10-Oct-24**

Next calibration due: **8-Apr-25**

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 18J104327

Air-Met Scientific Pty Ltd
[redacted]

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			4 metre cable

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.02		413975	pH 7.02
2. pH 4.00		pH 4.00		405966	pH 4.00
3. ORP		236.26mV		411371/409855	236.26mV
4. EC		2760uS		420141	2760uS
5. D.O		0%		12111	0.00%
6. Temp		21.7oC		901	21.7oC

Calibrated by: [redacted]

Calibration date: **01-Oct-24**

Next calibration due: **02-Apr-25**

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 18G103122

Air-Met Scientific Pty Ltd
[redacted]

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.00		413975	pH 7.00
2. pH 4.00		pH 4.01		405966	pH 4.01
3. ORP		237.58mV		411371/409855	237.58mV
4. EC		2760uS		420141	2760uS
5. D.O		0%		12111	0%
6. Temp		21.1		Testo Mini901	21.1

Calibrated by: [redacted]

Calibration date: 09-Oct-24

Next calibration due: 7-Apr-25

Oil / Water Interface Meter

Instrument Geotech Interface Meter (30m)
Serial No. 4003

Air-Met Scientific Pty Ltd
[redacted]

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: 30-Oct-24

Next calibration due: 01-May-25

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 11C100759

Air-Met Scientific Pty Ltd
[redacted]

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.01		413975	pH 7.01
2. pH 4.00		pH 4.00		405966	pH 4.00
3. ORP		236.26mV		411371/409855	236.26mV
4. EC		2760uS		420141	2760uS
5. D.O		0%		12111	0%
6. Temp		21.7oC		Testo 901	21.7oC

Calibrated by: [redacted]

Calibration date: 01-Oct-24

Next calibration due: 02-Apr-25

Oil / Water Interface Meter

Instrument Geotech Interface Meter (30M)
Serial No. 3983

Air-Met Scientific Pty Ltd
[redacted]

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: **2/10/2024**

Next calibration due: **1/12/2024**

09-Oct-24

Oil / Water Interface Meter

Instrument Geotech Interface Meter (30M)
Serial No. 3913

Air-Met Scientific Pty Ltd
[redacted]

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: **09-Oct-24**

Next calibration due: **08-Dec-24**

About Us

WSP is one of the world's leading engineering professional services consulting firms, bringing together approximately 65,000+ talented people around the globe. We are technical experts who design and provide strategic advice on sustainable solutions and engineer Future ReadyTM projects that will help societies grow for lifetimes to come. wsp.com

Appendix E

Interpretative graphs

E1 Introduction

Boxplots (or box-and-whisker plots) have been used to visualize the distribution of PFAS concentrations that have been measured over the broader OMR monitoring period at each of the groundwater, surface water, and sediment monitoring locations. An example boxplot is presented below with each of the defining characteristics of the plot identified (ie the box, whiskers, and outer points). Each of these characteristics is described below.

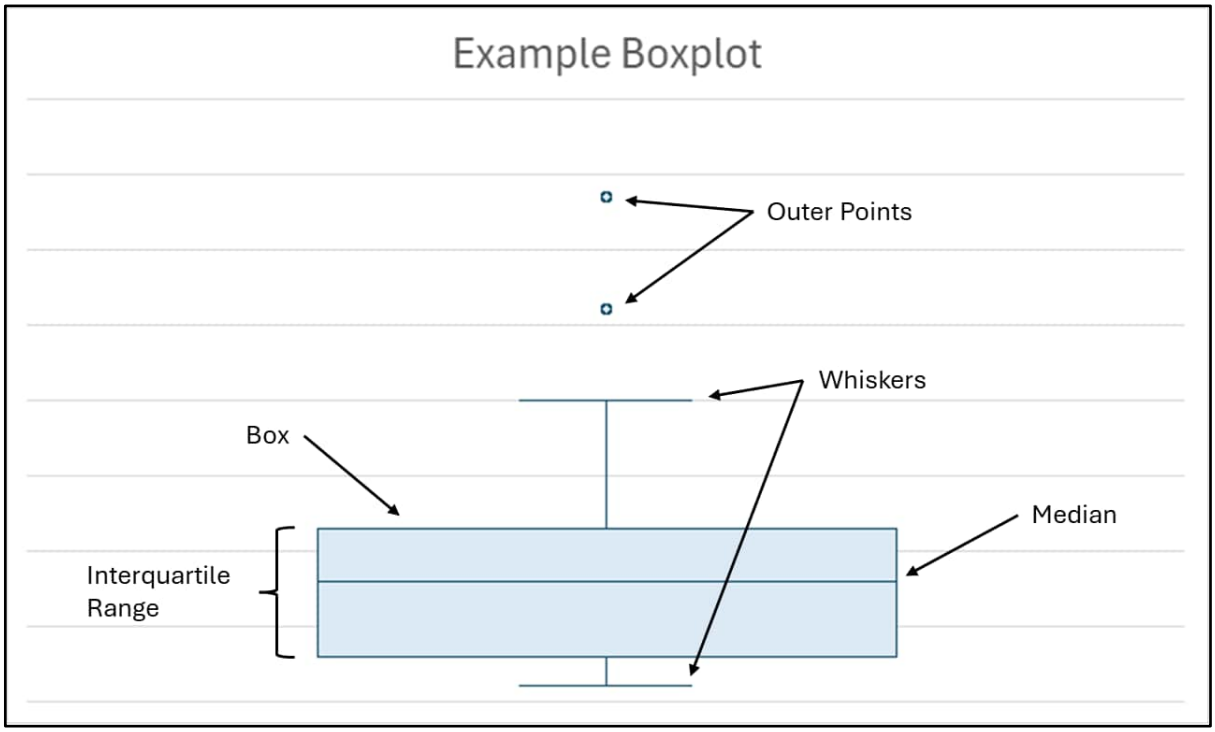

Figure E.1 Example of a boxplot illustrating the key components of the plot

- The box itself shows the interquartile range (IQR), which is the middle 50% of the data. The bottom of the box is the first quartile (Q1; 25th percentile), and the top is the third quartile (Q3; 75th percentile). The line inside the box represents the median (Q2; 50th percentile).
- The whiskers extend from the box to the smallest and largest values within 1.5 times the IQR from the quartiles. The whiskers provide a visualisation of the spread of most of the data.
- The outer points represent the data points that fall outside the whiskers. They are considered outliers and are often marked with dots or asterisks.

E2 Interpretative graphs - groundwater

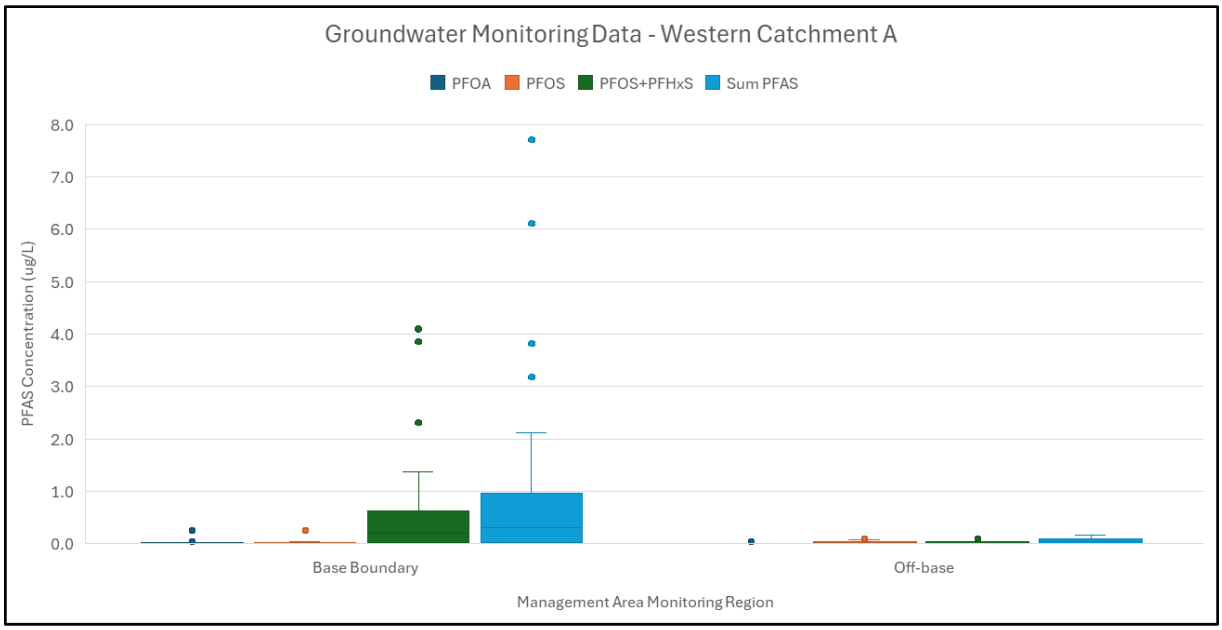

Figure E.2 Boxplot showing the distribution of groundwater PFAS concentrations in the western catchment of the Management Area, 2020 – 2024

Base Boundary Monitoring Locations: MW125I, MW125S, MW124

Off-base monitoring locations: MW217

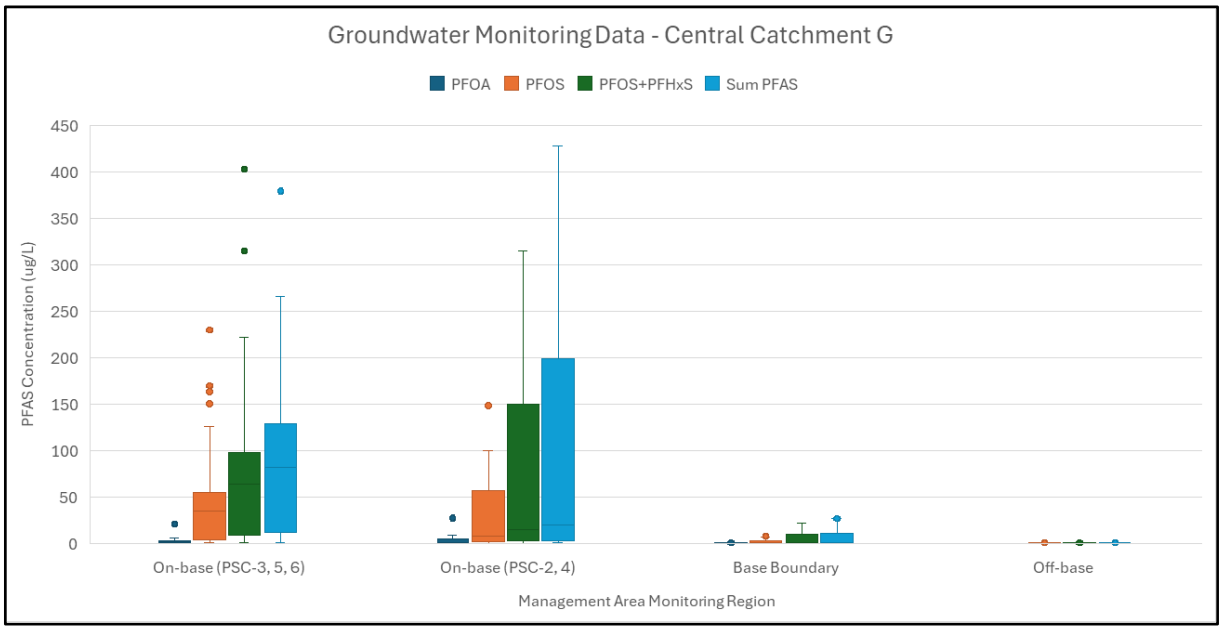

Figure E.3 Boxplot showing the distribution of groundwater PFAS concentrations in the central catchment of the Management Area, 2020 - 2024 (Outliers omitted)

Base monitoring locations (PSC-3, -5, -6): MW014A, MW072, MW074, MW077, MW131, and MW349 (1 Sum of PFAS outlier: MW131 - 656 µg/L)

Base monitoring locations (PSC-2, -4): MW101, MW128, MW138, and MW345 (5 PFOS outliers: MW128 - 483, 876, 461, 786, and 763 µg/L; 5 PFOS + PFHxS outliers: MW128 - 731, 1,300, 767, 1,200, and 1,100 µg/L; and 5 Sum of PFAS outliers: MW128 - 919, 1,620, 1,000, 1,490, and 1,320 µg/L)

Base boundary monitoring locations: MW003, MW065, MW120, MW121, MW122, MW123I, and MW123S

Off-base monitoring locations: MW205, MW212, MW226, MW233, MW235S, and MW236S

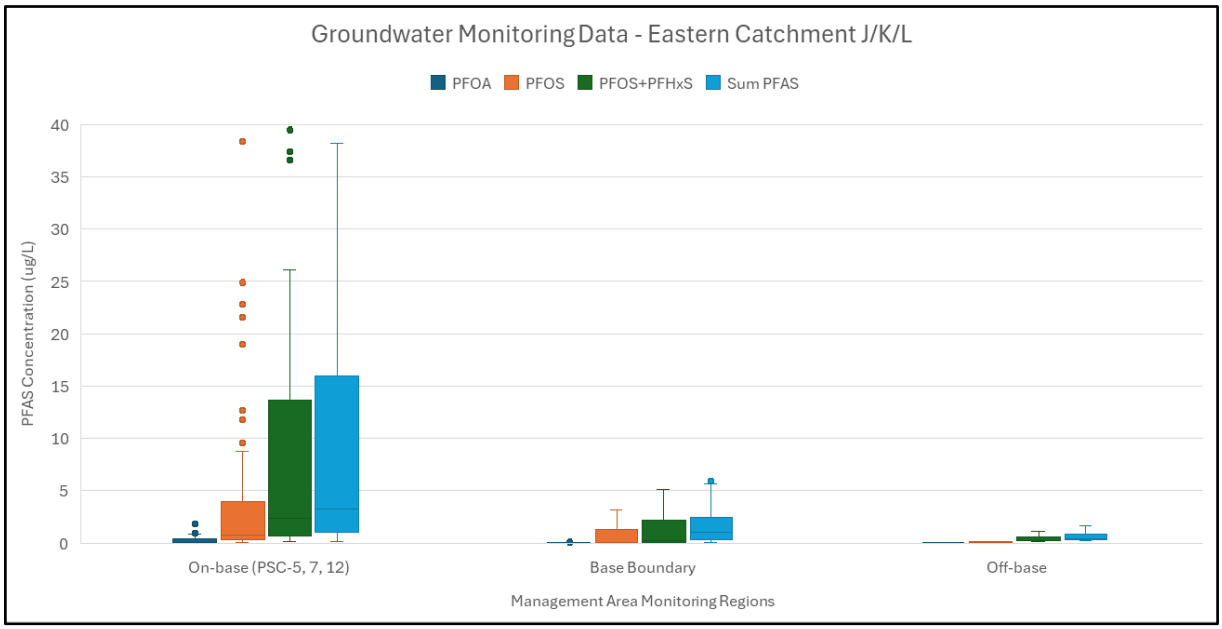

Figure E.4 Boxplot showing the distribution of groundwater PFAS concentrations in the eastern catchment of the Management Area, 2020 - 2024 (Outliers omitted)

Base monitoring locations (PSC-5, -7, -12): MW018, MW106, MW112, MW114, MW135, and MW141 (1 PFOS outlier: MW018 - 47.9 µg/L; 2 PFOS + PFHxS outliers: MW018 - 64.4 and 74.4 µg/L; and 8 Sum of PFAS outliers: MW018 - 53.7, 53.8, 48.4, 52.1, 94.6, and 93.5 µg/L and MW114 - 49.7 and 43.9 µg/L)

Base boundary monitoring locations: MW002, MW115, MW116, MW118, MW119, and MW139

Off-base monitoring locations: MW220S and MW232

E3 Interpretative graphs - surface water

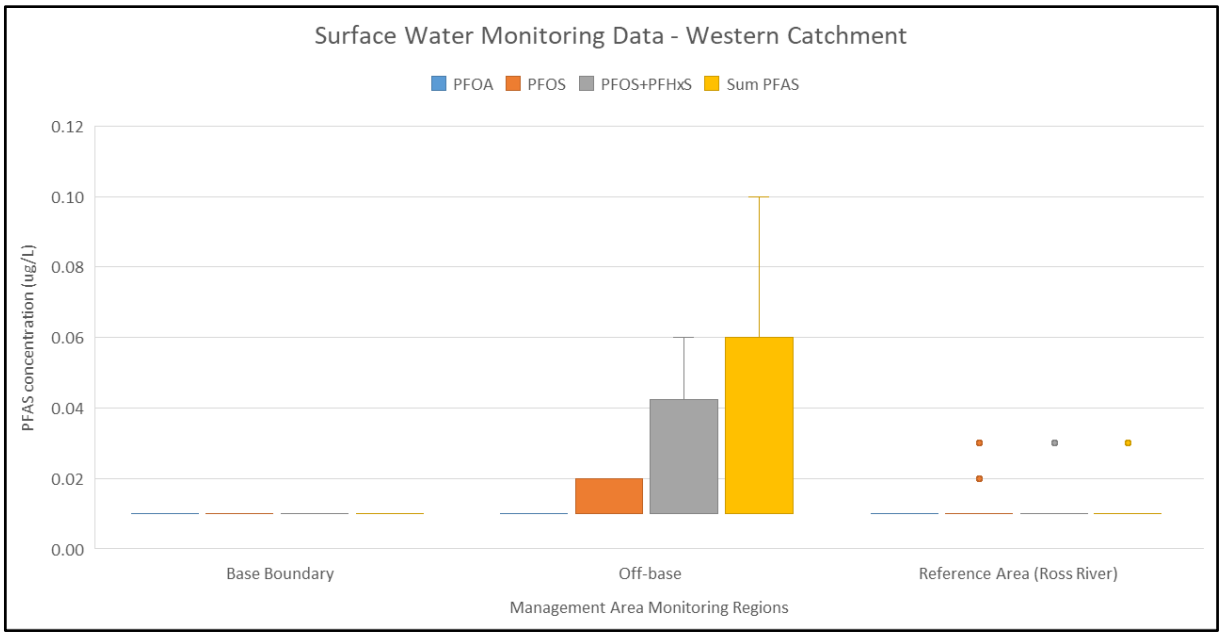

Figure E.5 Boxplot showing the distribution of surface water PFAS concentrations in the western catchment of the Management Area, 2020 – 2024

Base boundary monitoring locations: SW126

Off-base monitoring locations: SW217

Reference areas (Ross River): SW227, SW244, and SW245

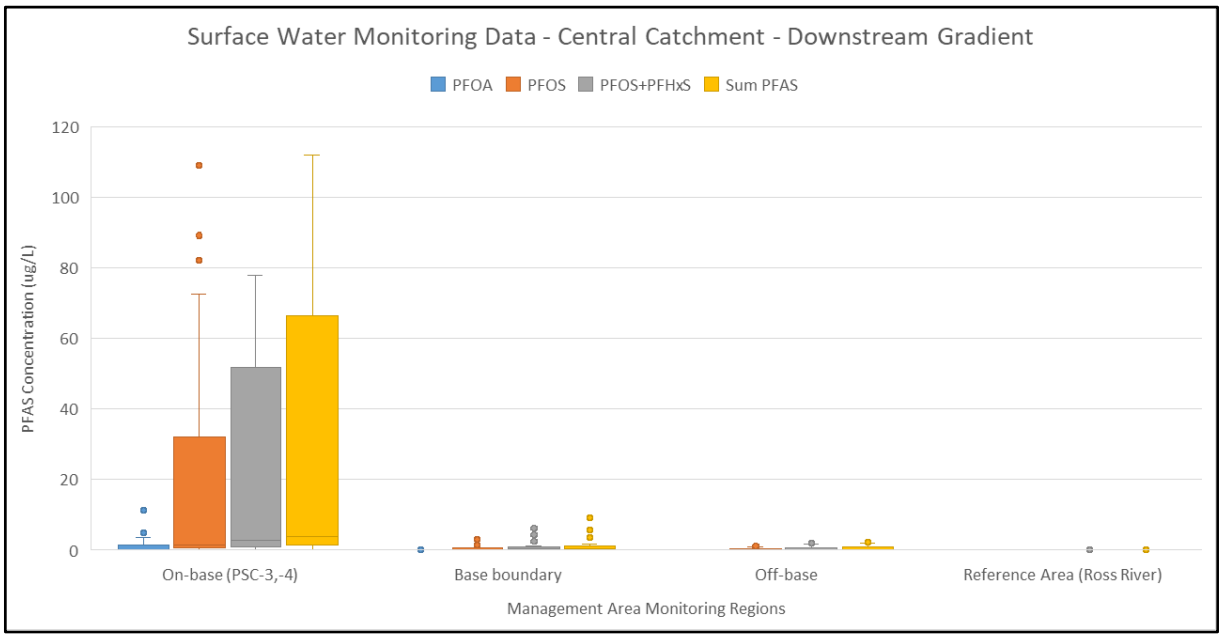

Figure E.6a Boxplot showing the distribution of surface water PFAS concentrations in the central catchment of the Management Area, 2020 – 2024

On-base monitoring locations (PSC-3, -4): SW109, SW110, SW139, SW140, and SW144 (1 PFOS outlier: SW109 - 161 µg/L; 5 PFOS + PFHxS outliers - SW109 - 128, 192, 165, 134, and 196 µg/L; and 5 Sum of PFAS outliers: SW109 - 178, 298, 216, 181, and 230 µg/L)

Base boundary monitoring locations: SW129, SW130, SW128, SW133, and SW134

Off-base monitoring locations: SW203, SW205, SW211, SW212, and SW233

Reference areas (Ross River): SW227, SW244, and SW245

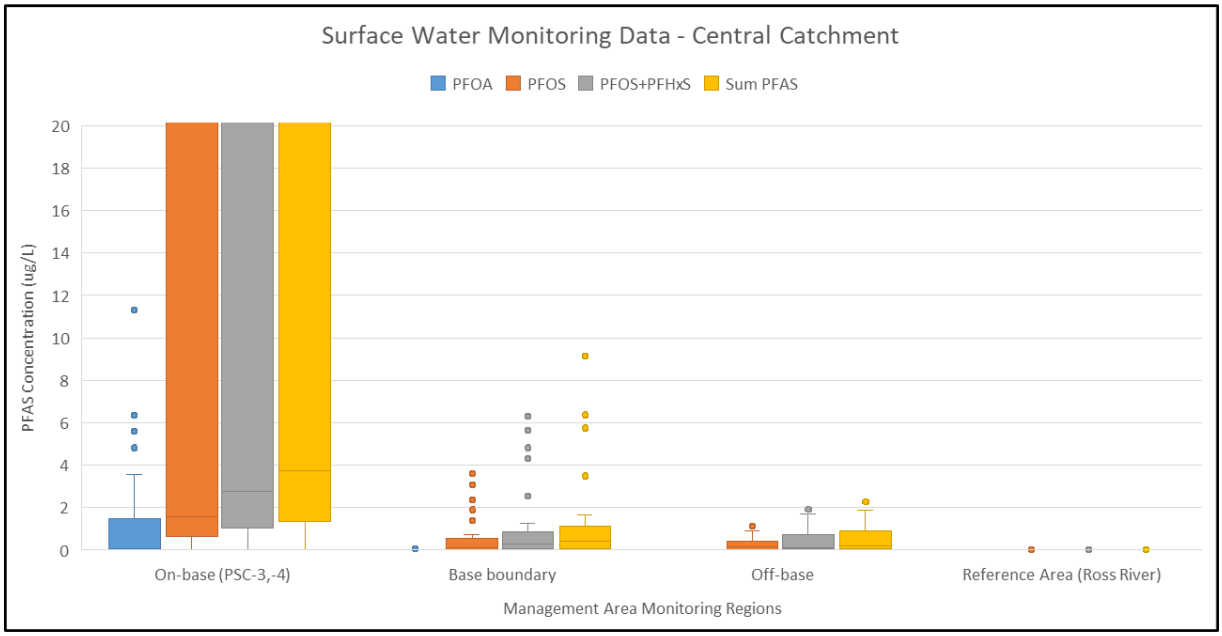

Figure E.6b Higher resolution boxplot showing the distribution of surface water PFAS concentrations in Catchment G of the Management Area, 2020 - 2024

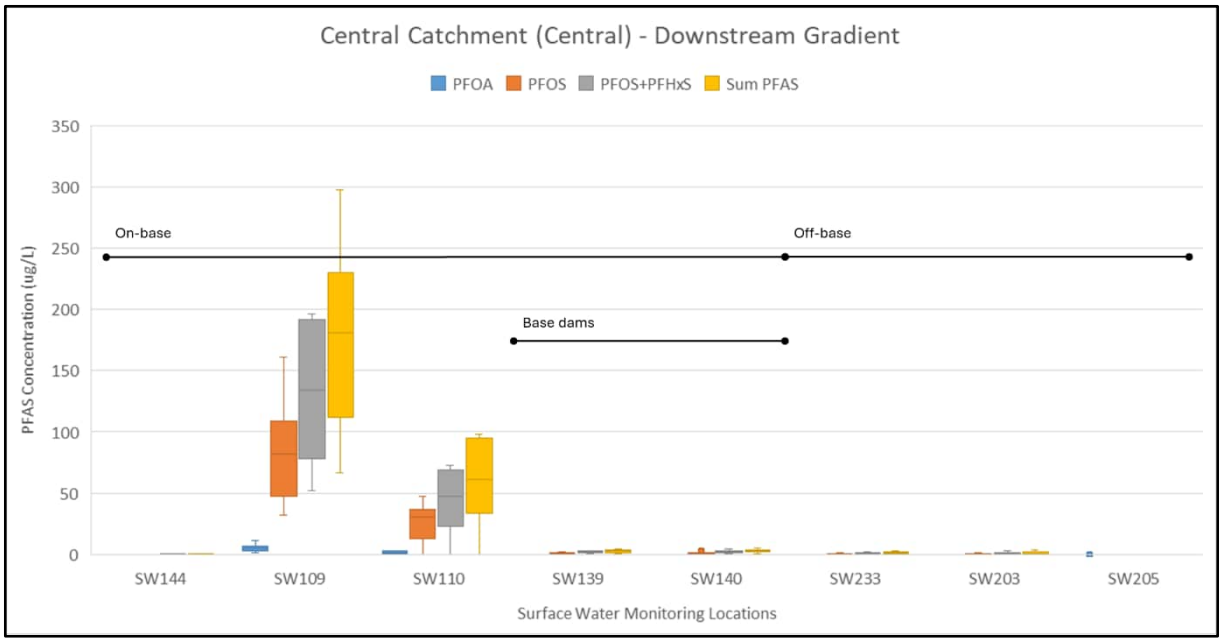

Figure E.7a Downstream PFAS concentration gradient for the central drainage area of Catchment G, 2020 – 2024

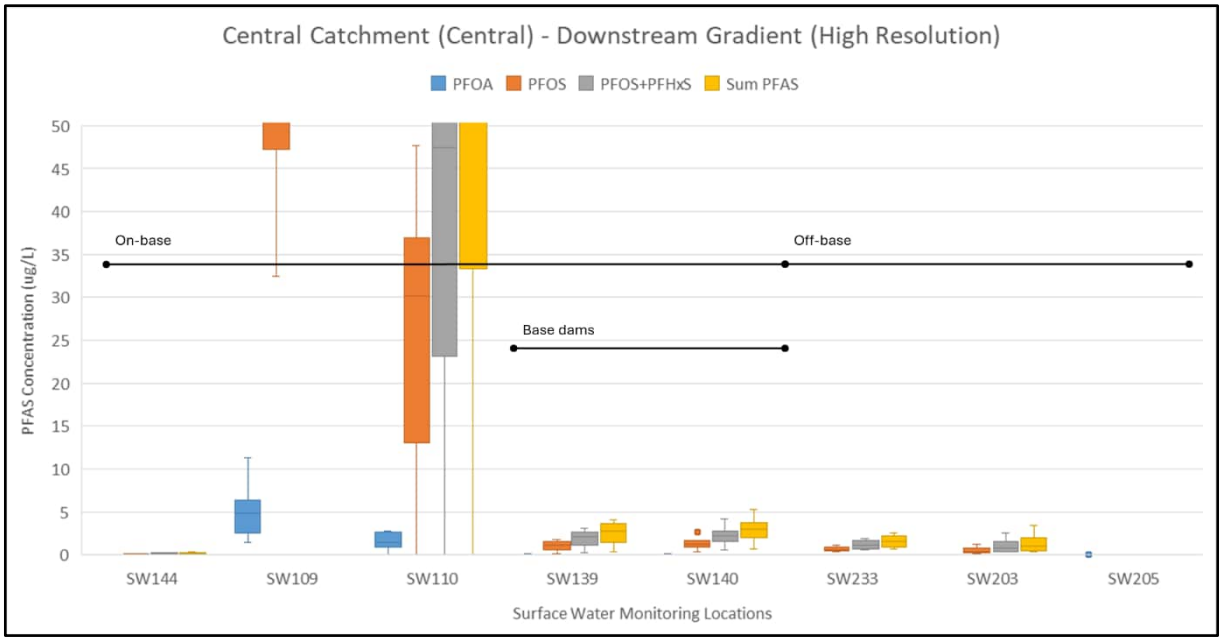

Figure E.7b Downstream PFAS concentration gradient for the central drainage area of Catchment G, 2020 – 2024

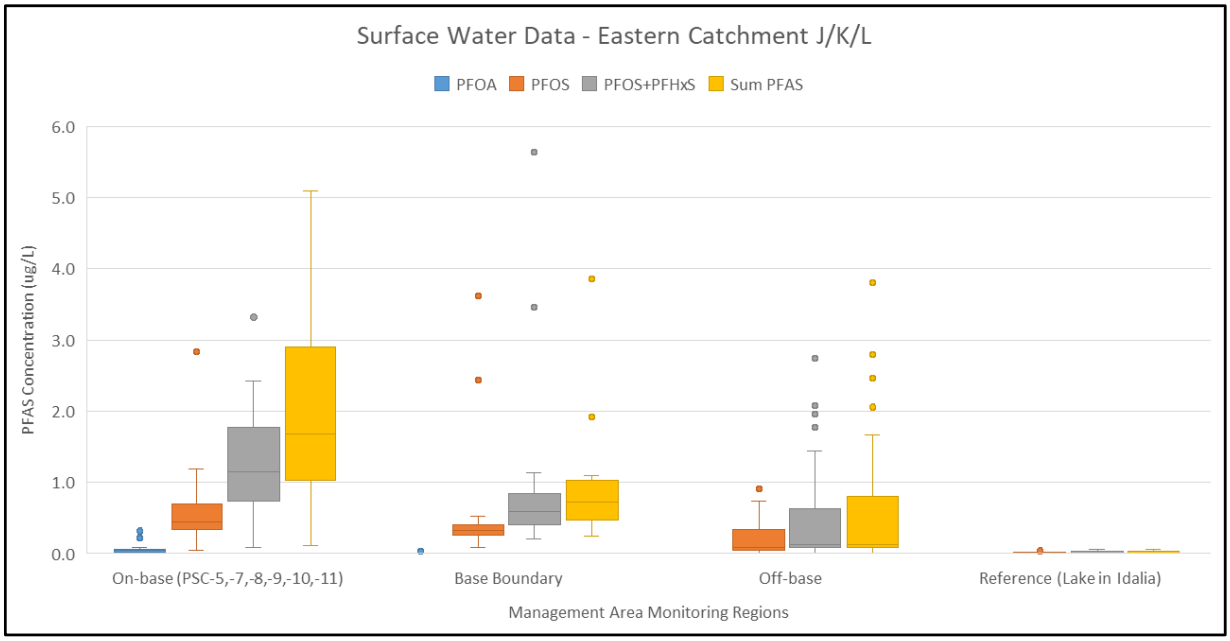

Figure E.8 Boxplot showing the distribution of surface water PFAS concentrations in the eastern catchment of the Management Area, 2020 – 2024

On-base monitoring locations (PSC-5, -7, -8, -9, -10, and -11): SW119, SW113, and SW121 (2 PFOS + PFHxS outliers - SW121 - 6.6 and 12.0 µg/L; and 2 Sum of PFAS outliers: SW121 - 10.7 and 17.8 µg/L)

Base boundary monitoring locations: SW135 and SW136 (1 Sum of PFAS outlier: SW135 - 6.49 µg/L)

Off-base monitoring locations: SW220, SW232, and SW242

Reference area (lake in Idalia): SW243

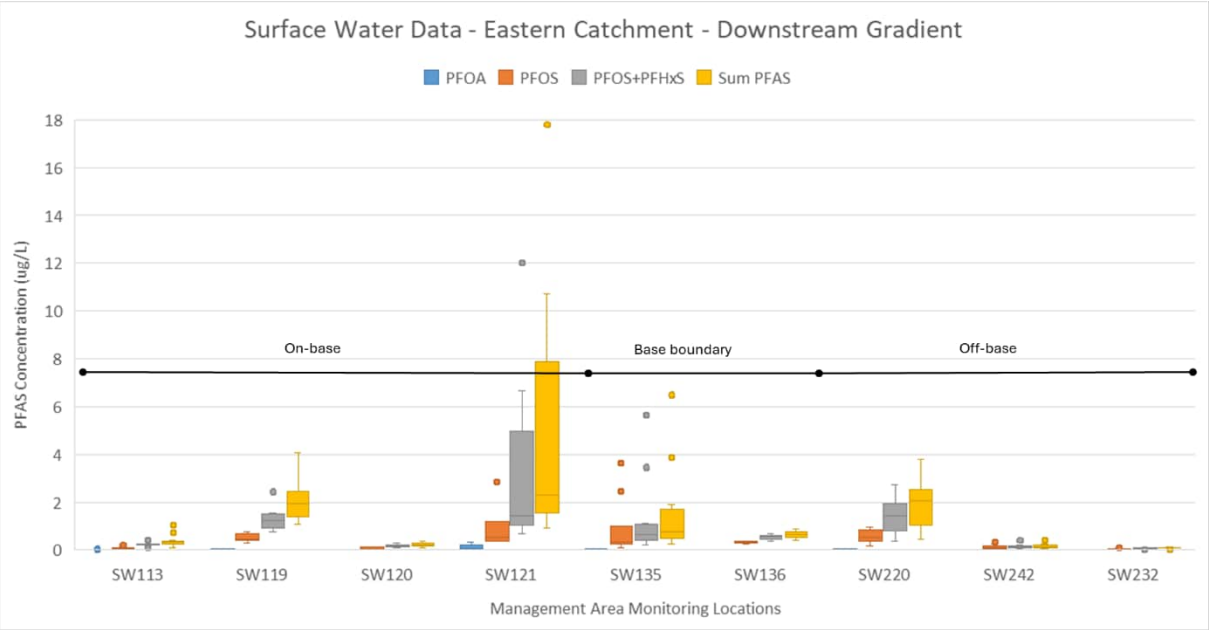

Figure E.9 Downstream PFAS concentration gradient for the eastern catchment of the Management Area, 2020 - 2024

E4 Interpretative graphs - sediment

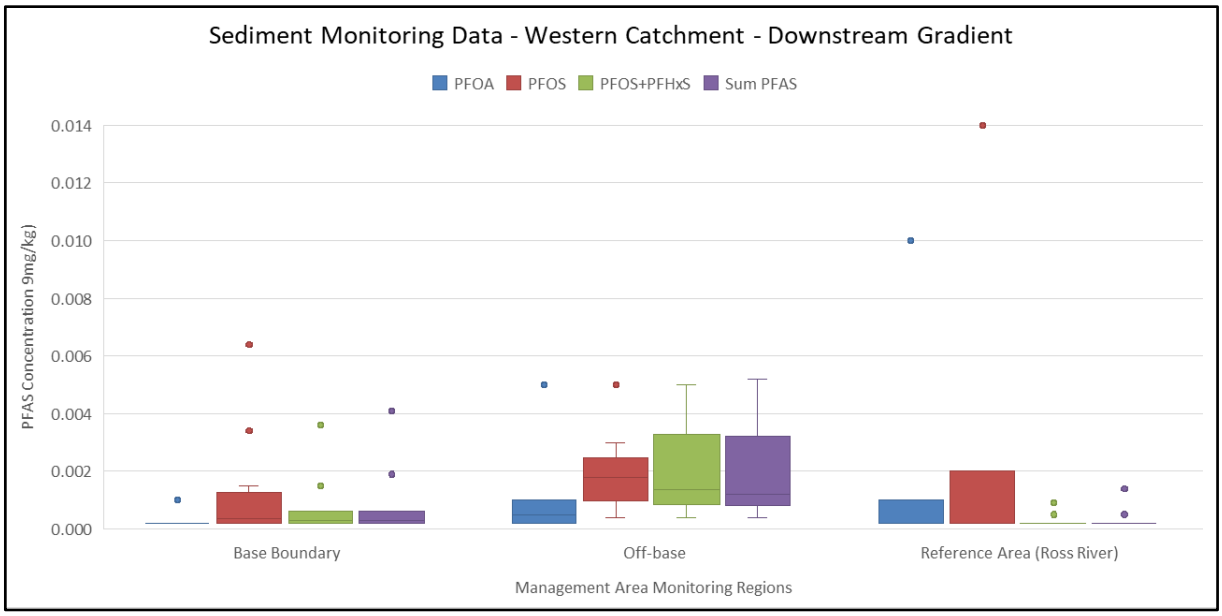

Figure E.10 Boxplot showing the distribution of sediment PFAS concentrations in the western catchment of the Management Area, 2020 – 2024

Base Boundary Monitoring Locations: SD126

Off-base monitoring locations: SD217

Reference Areas (Ross River): SD227, SD244, and SD245

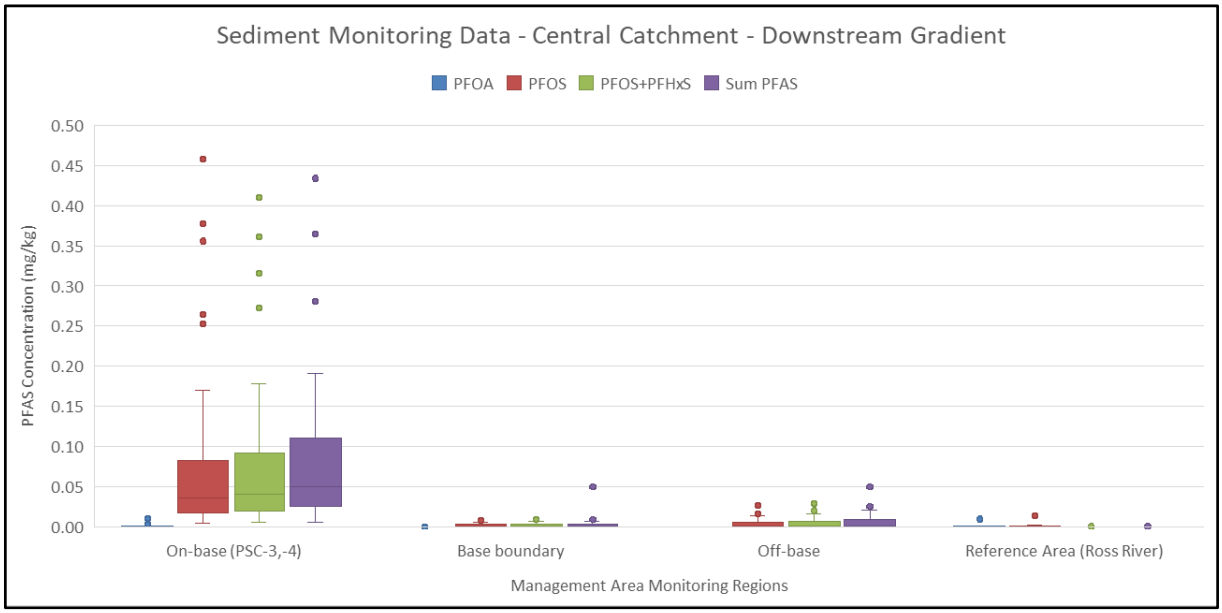

Figure E.11 Boxplot showing the distribution of sediment PFAS concentrations in the central catchment of the Management Area, 2020 – 2024

On-base monitoring locations (PSC-3, -4): SD109, SW110, SW139, SW140, and SW144 (1 PFOS outlier: 2.05 mg/kg; 1 PFOS + PFHxS outlier: 2.20 mg/kg; and 1 Sum of PFAS outlier: 2.31 mg/kg)

Base boundary monitoring locations: SD129, SD130, SD128, SD133, and SD134

Off-base monitoring locations: SD203, SD205, SD211, SD212, and SD233

Reference areas (Ross River): SD227, SD244, and SD245

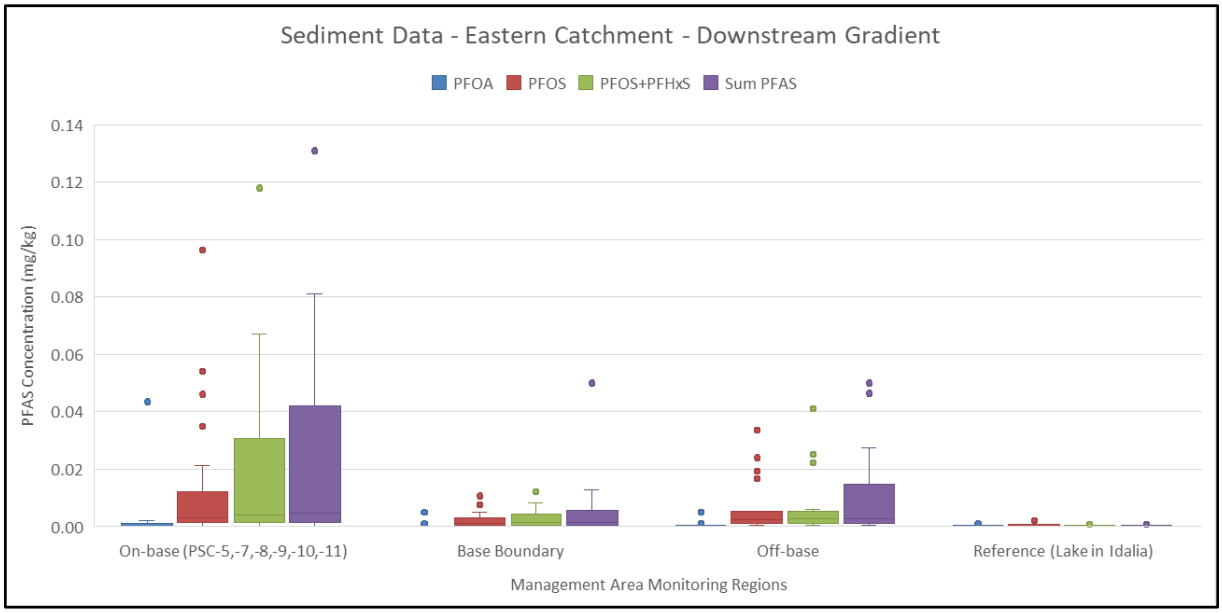

Figure E.12 Boxplot showing the distribution of sediment PFAS concentrations in the eastern catchment of the Management Area, 2020 – 2024

On-base monitoring locations (PSC-5, -7, -8, -9, -10, -11): SD113, SD119, SD120, SD121 (1 PFOS outlier: 0.418 mg/kg; 1 PFOS + PFHxS outlier: 0.92 mg/kg; and 1 Sum of PFAS outlier: 1.31 mg/kg)

Base boundary monitoring Locations: SD135 and SD136

Off-base monitoring locations: SD220, SD232, and SD242

Reference area (Ross River): SD243

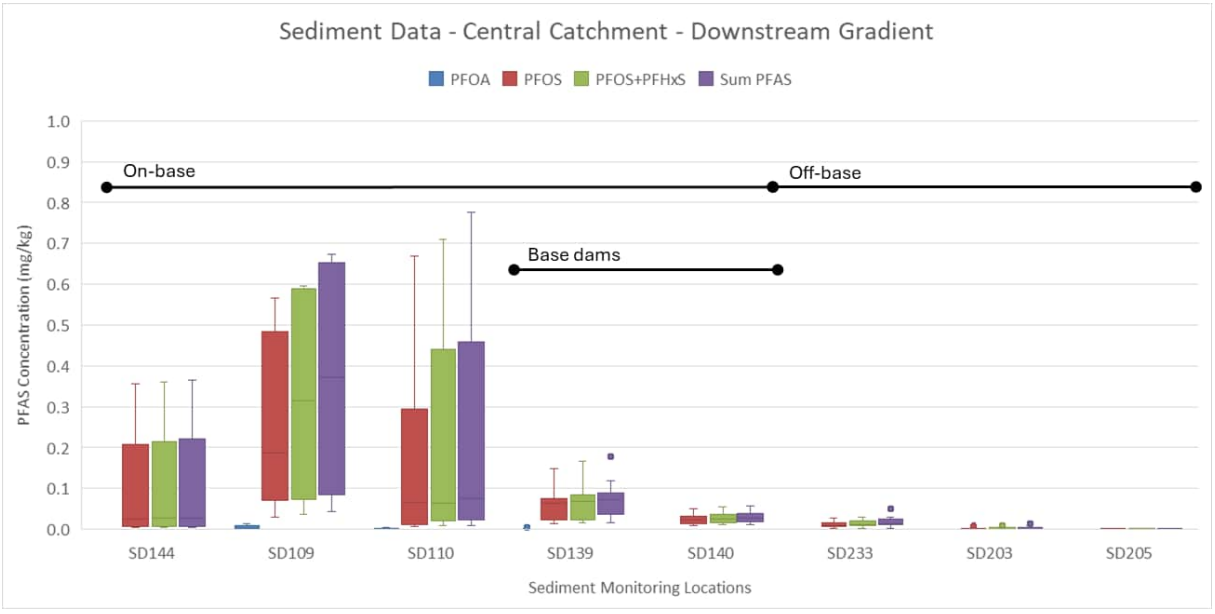

Figure E.13 Downstream sediment PFAS concentration gradient for the central drainage area in Catchment G, 2020 – 2024

Outliers omitted from the graph: SD109 (1 PFOS outlier: 2.05 mg/kg; 1 PFOS + PFHxS outlier: 2.20 mg/kg; and 1 Sum of PFAS outlier: 2.31 mg/kg)

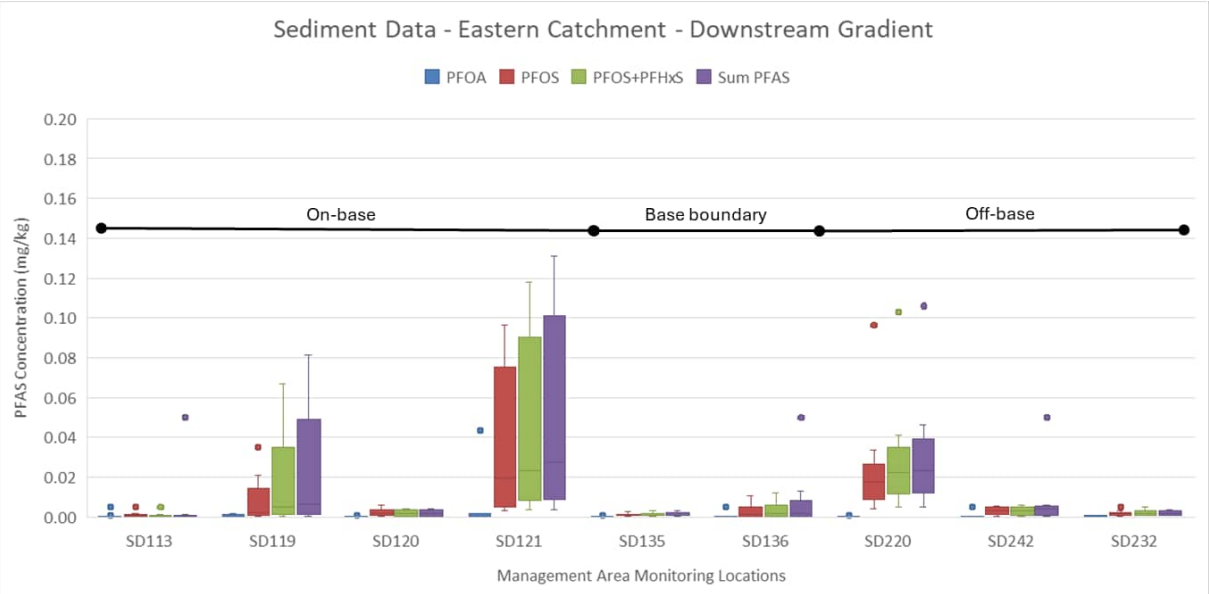

Figure E.14 Downstream PFAS concentration gradient for the eastern catchment of the Management Area, 2020 - 2024

Outliers omitted from the figure - SD121 (1 PFOS outlier: 0.418 mg/kg; 1 PFOS + PFHxS outlier: 0.92 mg/kg; and 1 Sum of PFAS outlier: 1.31 mg/kg)

About Us

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