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AECOM

Annual Interpretive Report - 2021

PFAS OMP - Army Aviation Centre Oakey

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Client: Department of Defence

ABN: 68706814312

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Abbreviations

Abbreviation	
AACO	Army Aviation Centre Oakey
AECOM	AECOM Australia Pty Ltd
AFFF	Aqueous film forming foam
AHD	Australian height datum
AIR	Annual interpretive report
ASC NEPM	Assessment of Site Contamination National Environment Protection Measure 1999 (as amended 2013)
BOM	Bureau of Meteorology
Brymaroo	Brymaroo Satellite Site
CSM	Conceptual site model
DCMM	Defence contamination management manual
Defence	Department of Defence
DO	Dissolved oxygen
DOC	Dissolved organic carbon
DQIs	Data quality indicators
DQOs	Data quality objectives
DSI	Detailed Site Investigation
EC	Electrical conductivity
Eh	Oxidation reduction potential
ERA	Ecological risk assessment
ESA	Environmental site assessment
FTS	Fluorotelomer sulphonate
HBGV	Health based guidance values
HEPA	Heads of Environmental Protection Agencies
HHRA	Human health risk assessment
LOR	Limit of reporting
MA	Management area
mbgs	Metres below ground surface
MZ	Management zone
NEMP	National Environmental Management Plan
NEPC	National Environment Protection Council
NHMRC	National Health and Medical Research Council
OMP	Ongoing monitoring program
PFAS	Per- and poly-fluorinated alkyl substances
PFHxS	Perfluorohexane sulfonate
PFOA	Perflurooctanoic acid

Abbreviation	
PFOS	Perflurooctanesulfonic acid
PMAP	PFAS Management Area Plan
QA/QC	Quality assurance / quality control
SAQP	Sample analysis and quality plan
SILO	Scientific information for land owners
Temp	Temperature
TSS	Total suspended solids

Executive Summary

Background

AECOM Australia Pty Ltd (AECOM) was engaged by the Department of Defence (Defence) to implement the Ongoing Monitoring Program (OMP) for per- and poly-fluorinated alkyl substances (PFAS) in surface water, sediment and groundwater at the Army Aviation Centre Oakey (AACO) (the 'Base') and Management Area outside the Base. The OMP also included monitoring at Brymaroo Satellite Site (Brymaroo), located approximately 25 km northwest of AACO.

This report presents the data for completed monitoring in October 2020 and April 2021. It also provides commentary on observed trends, significant first time detects of PFAS, noteworthy changes in concentrations, and any other observations that have been made with respect to the behaviour and movement of PFAS on the Base and in the Management Area.

Interpretive Assessment

- Monitoring results indicated that the concentrations of PFAS in groundwater were generally similar to previous sampling events. Some pertinent observations are provided below. All results refer to the sum of the compounds perfluorohexanesulfonic acid (PFHxS) and perfluorooctanesulfonic acid (PFOS) which are the primary PFAS contaminants at AACO and the Management Area:
- The highest groundwater concentrations were detected in and close to source areas on the Base where PFAS firefighting foams were used or stored. Concentrations in these areas were similar to previous monitoring events and showed no evident increasing or decreasing trends.
- Reported PFAS concentrations in groundwater off-Base were generally consistent with historical data. Increasing concentrations were reported at MW122 (approximately 250 west of the Base) in the 2020 AIR (AECOM, 2021), however, the most recent monitoring event in April 2021d) returned a concentration of 2.06 µg/L which is within the historical range of data collected since 2018.
- MW113 (also west of the Base) first detected PFAS in 2014 (0.02 µg/L) at concentrations close to the limit of laboratory detection. The concentrations notably increased in 2017 (0.3 µg/L) but have been stable since.
- The previous annual interpretive report (AECOM, 2021d) identified localised increasing sum of PFHxS and PFOS in an area located in the southwestern portion of the Management Area (MW134 and MW262), hydraulically downgradient of the former Council landfill, however decreased sum of PFHxS and PFOS concentrations were reported for groundwater samples from these locations in April 2021 compared to March 2020 results.
- At Brymaroo, groundwater results in April 2021 were consistent with historical results indicating stable concentrations.
- Minor fluctuations in concentrations as observed at several locations are common and likely the result of analytical variability due to the low detection limits and/or seasonal fluctuations.

Monitoring results indicated that the concentrations of PFAS in surface water and sediment were generally similar to previous sampling events. Some pertinent observations are provided below. All results refer to the sum of the compounds PFHxS and PFOS:

- Lower concentrations have been recorded in sediment samples collected from on-Base drainage channels between 2019 and 2021 compared to PFAS concentrations recorded between 2015 and 2018. The lower concentrations may be attributed to the excavation of sediment along the on-Base drainage channels in 2018 and the cessation of use of PFAS containing firefighting foams.
- No significant change was observed in PFAS concentration in off-Base sediment.
- PFAS results in 2021 in surface water from the on-Base drainage channels were lower than the historical maximum concentrations indicating generally stable concentrations. Decreases in concentrations since 2018 may reflect reduction in mass flux along the drainage channels following completion of remediation works along the on-Base drainage channels.

Changes to the Risk Assessment

The data collected during the OMP over the 12-month monitoring period suggest that the risk profile to human health within the AACO Management Area and Brymaroo is unchanged.

Closing Summary

A detailed environmental investigation and risk assessment was completed by AECOM in 2017 (AECOM, 2017a). It found that the historical use of foam firefighting products at the Base resulted in widespread PFAS impacts to surface water and groundwater.

Defence completed remediation of the former fire training area (FFTA) in October 2021 and it is no longer a contributor to PFAS movement from the Base via surface water. Remediation works have also been completed at the former Fire Station and within the 3 stormwater drains that leave the Base. Other remaining source areas have been investigated by AECOM and at least four were identified as requiring remediation. A Remediation Action Plan is being prepared for these areas. Ongoing monitoring of the Base drains will measure the impact of recent remedial works at the FFTA. Further soil remedial works are planned in late 2023 and early 2024. Groundwater remedial works have continued at the Base and the best utilisation of the treatment plants will be assessed by Defence during 2022.

Overall, this AIR report has not identified any significant changes to the distribution of PFAS nor significant concentrations trends in the Management Area. However, the cessation of PFAS foam use and the remedial works (both planned and completed) will over time reduce the amount of PFAS that is available to migrate from the Base in surface water and groundwater. This will contribute to the long-term reduction of PFAS concentrations in the Management Area.

1.0 Introduction

AECOM Australia Pty Ltd (AECOM) has been engaged by the Department of Defence (Defence) to implement the Ongoing Monitoring Program (OMP) (Defence, 2019) for monitoring of per- and poly-fluoroalkyl substances (PFAS) at the Army Aviation Centre Oakey (AACO) (0207) (the 'Base') Management Area and Brymaroo Satellite Site (Brymaroo), located approximately 25 km northwest of AACO. The locations of the Base, Management Area and Brymaroo are shown in **Figure 1** and **Figure 2** in **Appendix A**.

The monitoring targeted PFAS in a range of environmental media at selected locations on-Base and in surrounding off-Base areas, including the AACO Management Area. The monitoring also included selected locations at Brymaroo.

In order to meet the objectives of the OMP, the monitoring was undertaken in accordance with the AECOM (2021a) sample and analysis quality plan (SAQP). This report has been prepared in accordance with the Defence (2021) OMP Annual Interpretive Report Guidance.

1.1 Purpose and Objectives

The objective of the OMP is to set out a program of monitoring to continue to assess the changes in the nature and extent of PFAS within the environment, where Defence's historical use of legacy aqueous film forming foam (AFFF) has led to a potentially elevated risk to a receptor, or potential future risk to a receptor.

Assessing changes in the distribution, concentration, and transport (pathways and flow rates) of the contaminants against appropriate guideline values provides:

- An evidence base for targeted and effective risk management decision making to protect human health and environmental receptors.
- An early warning that additional management of PFAS contamination may be warranted in areas not currently understood to be affected by PFAS.

These data will be evaluated to determine environmental variability and significant trends in PFAS concentrations. This will inform any changes to the known risk profile and recommendations for triggers to review OMP, PFAS Management Area Plan (PMAP) (Defence, 2019) or human health risk assessment (HHRA) (AECOM, 2017b) documentation, if required.

1.2 Scope of Work

The scope of works for this interpretive report includes assessing changes to the distribution of PFAS over the preceding 12-month period (May 2020 to April 2021) and how this changes the understanding of the conceptual site model (CSM) and the risk profile with respect to PFAS impacts at the Base. This included evaluation of data reported in the following factual reports as well as data from historical reports:

- *Sampling Event Factual Report - October 2020. Army Aviation Centre Oakey* (AECOM, 2021b)
- *Sampling Event Factual Report – March/April 2021. Army Aviation Centre Oakey* (AECOM, 2021c).
- *Annual Interpretative Report – 2020, Army Aviation Centre Oakey* (AECOM, 2021d).
- Data and other outcomes of the detailed site investigation at AACO (AECOM, 2017a) and Brymaroo (AECOM, 2018d), the human health risk assessment (HHRA) (AECOM, 2017b), the ecological risk assessment (ERA) (AECOM, 2018a) and the PMAP for AACO (Defence, 2019).
- Data collected during historical sampling events completed since the environmental site assessment (ESA) (AECOM, 2018b, 2018d, 2019a, 2019b, 2020a, 2020b).
- Data collected as part of the PMAP delivery works (AECOM, 2021e,f in draft).

To complete this scope of work AECOM completed periodic groundwater, surface water and sediment monitoring in accordance with the SAQP (AECOM, 2021a).

This report considers monitoring results in the context of the ongoing remediation activities at AACO. During the monitoring period, this included the operation of two groundwater treatment plants, which have extracted and treated contaminated groundwater from the area of the former fire station and the area of the current fire training facility.

2.0 Site Setting

The subsections below describe the site and environmental setting for AACO and Brymaroo.

2.1 AACO

2.1.1 Site Description

Table 1 summarises the Base identification and site setting presented in the PMAP (Defence, 2019) for AACO.

Table 1 AACO Identification and Setting Summary

Element	Description
Base ID	0207
Location	AACO is located at Orr Road, Oakey and is also bounded by Corfe Road, Oakey Cooyar Road, Wilthorne Kelvinhaugh Road and Oakey Kelvinhaugh Road. AACO is located approximately 2 km north-east of the Oakey township and occupies an area of 850 hectares, see **Figure 1**, **Appendix A**.
Regional Climate	Based on the Bureau of Meteorology (BOM) Oakey Aero station #41359 dataset and the Oakey scientific information for landowners (SILO) rainfall dataset, the average annual rainfall, from 1970 to 2015, is 633 mm/year. The wettest months occur during summer with relatively dry winter months. Long-term Oakey SILO datasets (1970 to 2015) shows average evaporation peaks at 216 mm/month in December and January and is lowest at 69.2 mm/month in June. Potential evapotranspiration peaks at 170 mm/month in December and is lowest at 56.3 mm/month in June. The higher evaporation compared to rainfall indicates a negative climate balance across the Oakey area.
Topography	AACO is located on a relatively flat alluvial plain. The regional topography slopes to the west and southwest in the direction of the Oakey and Condamine Floodplains. The elevation of the Base is approximately 400 metres above Australian Height Datum (mAHD). On-Base, inclines have been constructed to grade the drainage system away from the runways. The Base drains to the south via a series of unlined drains discharging into Oakey Creek.
Geology and hydrogeology	Tectonically, AACO and surrounds are situated within the central eastern part of the Clarence-Moreton Basin, which contains sediments of the Late Triassic to Late Jurassic age. The sediments comprise sandstone, siltstone, mudstone, and coal. The Walloon Coal Measures is the uppermost formation of the Clarence-Moreton Basin. Uncomfortably overlying the Clarence-Moreton Basin are extensive areas of unconsolidated younger alluvial sediments such as the Oakey Creek Alluvium and Main Range Volcanics. The main receiving aquifer beneath AACO is the Oakey Creek Alluvium aquifer, the base of which is at least 50 metres below ground surface (mbgs). The available data indicates that groundwater occurs in the Oakey Creek Alluvium both as perched aquifers and as a more laterally extensive basal aquifer. As the alluvium consists of meandering discontinuous sequences of gravel, sands, silts and clays, the capacity of the alluvium to store and transmit groundwater is variable both vertically and laterally across its extent. These aquifers are unconfined to semi-confined in nature. Further information on the geology and hydrogeology is presented in the ESA (2AECOM, 2017a).
Surface Water	Stormwater flow at AACO is principally from kerb and channel, piped systems, overland flow and open drains. All of AACO's drainage lines are ephemeral. AACO's stormwater drainage network consists of approximately 23 km of pipe

Element	Description
	typically ranging in diameter between 300 mm and 1,200 mm, and approximately 33 km of unlined open drainage lines. Stormwater infrastructure at the Base dates back to the 1970s (AECOM, 2017a). The hydrology of AACO is split between two major catchments: • Doctor Creek catchment – stormwater runoff in the northern part of the airfield is captured and diverted to Doctor Creek, which is a tributary of Oakey Creek and discharges into Oakey Creek, approximately 14 km downstream from the Base. • Oakey Creek catchment – all operational areas of the Base are located within the Oakey Creek catchment; therefore, all flows entering the stormwater drainage system are directed via the four main drains towards Oakey Creek, located approximately 1 km to the south of the Base. The four main drainage channels are: • Drainage channel 1: extends from the southwest corner of the airfield, running in a southerly direction, merging with the central drain before discharging to Oakey Creek • Drainage channel 2: aligned parallel to Orr Road, running in a southwesterly direction from the airfield across the Base and merging with the west drain before discharging to Oakey Creek • Drainage channel 3: aligned parallel to Swartz Road, running south from the southeastern corner of the airfield across the Base and discharging to Oakey Creek. A portion of stormwater flows from East Drain into a private farm dam, located about 800 m south of the Base. Overflow from the dam returns into the East Drain and discharges into Oakey Creek (AECOM, 2015) • Drainage channel 4: aligned parallel with the eastern Base boundary, running in a southerly direction from the airfield and discharging to Oakey Creek. A weir on Oakey Creek creates a semi-permanent water body that receives and retains runoff from the surface water drains discharging from the Base.
Current and Previous Land Use	The Base is currently used by the Defence Force for Army Aviation and has maintained a role as a military facility since the Base's inception in 1943. The Base currently operates as the Army's helicopter training school for pilots and aviation technicians and is also home to a Republic of Singapore Airforce helicopter squadron. The northern part of the Base is the airfield, while the southern part of the Base comprises support services, buildings and infrastructure. Approximately 290 hectares of the Base are leased for agriculture (western portion of the Base). The Base is bounded by Corfe Road, Oakey Cooyar Road, Wilthorne Kelvinhaugh Road and Oakey Kelvinhaugh Road.
Landuses surrounding the Base	The surrounding landuse to the west, north and east is predominantly made up of rural allotments which are utilised for a range of pastoral and agricultural purposes (principally for grain cropping and limited livestock production). Some residential allotments are located immediately adjacent to the southern perimeter of the Base. The nearby township of Oakey comprises residential, light industrial and business/commercial zoned areas.

Element	Description
	The Warrego Highway and Western Railway Line are located approximately 3 km and 1 km to the south of the Base.

2.1.2 AACO Management Area

The AACO Management Area was established in 2017 and comprises three zones (see **Figure 2**, **Appendix A** and **Plate 1**). Defence has issued precautionary advice for residents within each management zone.

- **Management Zone (MZ) 1:** this zone is located immediately to the south and southwest of AACO. It has the highest perfluorooctanesulfonic acid (PFOS) and perfluorohexanesulfonic acid (PFHxS) concentrations in groundwater in the Management Area given its closer proximity to the AACO and potential downwards migration of PFAS from surface water in drainage channels 1 and 2.
- **Management Zone 2:** this zone is located further to the south and southwest of the AACO. It has higher sum of PFOS and PFHxS concentrations in groundwater in comparison with MZ3 as a result of a combination of impacted groundwater flowing to the south and west from the Base together with downwards migration of PFAS-impacted surface water from the drains leaving the Base.
- **Management Zone 3:** located outside MZ1 and MZ2 and within the remainder of the Management Area. PFAS was not detected by the laboratory in the majority of groundwater samples collected from groundwater monitoring bores in this Management Zone.

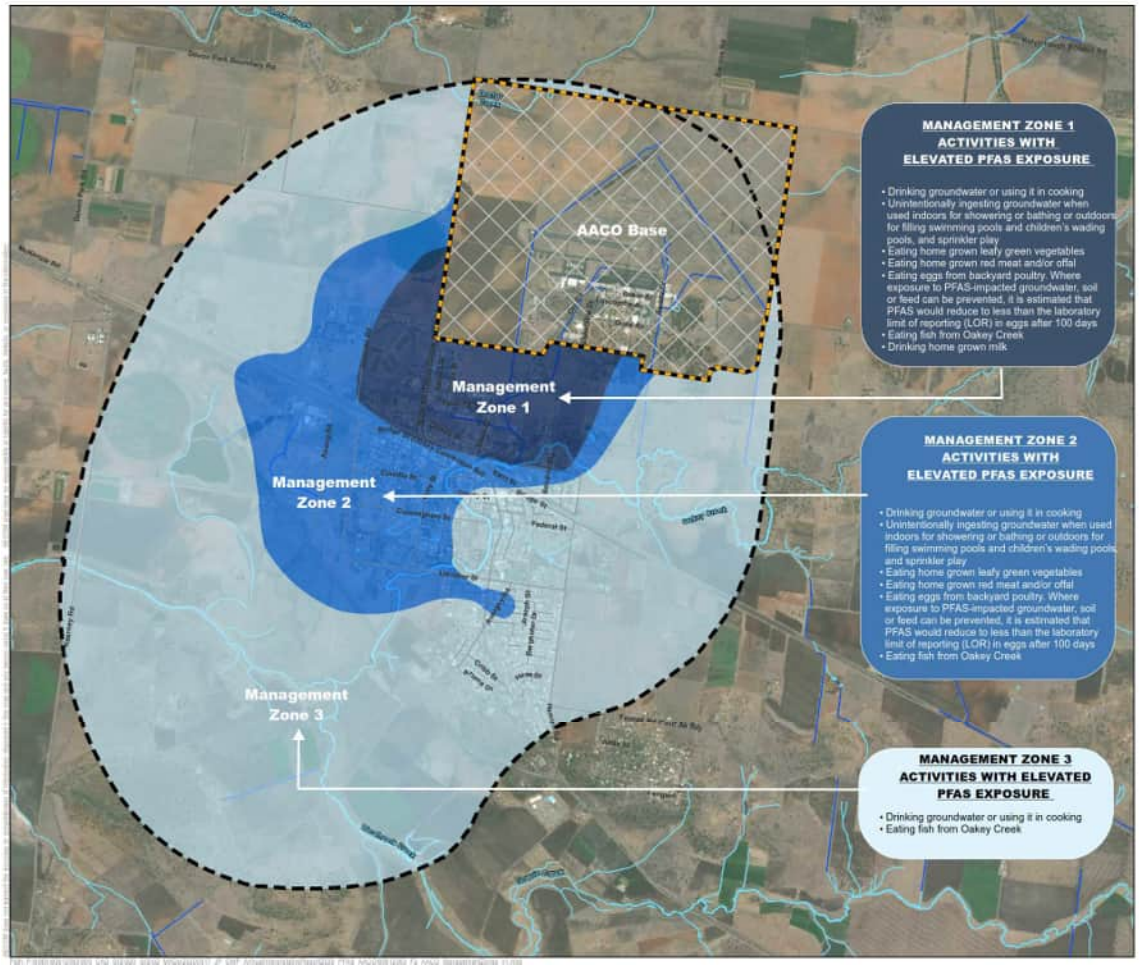

Plate 1 AACO Management Area and Management Zones

2.1.3 Source Areas

The PMAP (Defence, 2019) identifies the following locations as PFAS source areas.

- Former fire training area in Area North
- Former fire station and foam training area in Area B3
- Former fuel compound and hot refuelling point in Area F1
- Hot refuel area in Area A2
- Spent AFFF recovery underground storage tank in Area A2
- Spent AFFF recovery underground storage tank in Area S1
- Spent AFFF recovery underground storage tank in Area C1
- AFFF storage and decanting areas in Area D2
- Current fire training area in Area D2.

The locations of the source areas are presented in **Figure 3**, **Appendix A**.

The 2017 ESA (AECOM, 2017a) investigated other potential sources of PFAS outside of the Base, including the following:

- former landfill on Lorrimer Street
- use of PFAS-impacted water for irrigation
- areas inundated by PFAS-impacted flood waters.

Based on groundwater analytical results, the former landfill is considered to be a secondary source of PFAS. The affected area around the former landfill is limited, possibly due to the lower permeability of the Oakey Creek Alluvium in this area.

It is considered that PFAS-impacted water used for irrigation could be contributing to the PFAS in the underlying groundwater. However, as seepage of PFAS-impacted surface water to the underlying aquifer from farm dams and drains also occurs in the Management Area, the relative contribution of all these processes to PFAS in the underlying groundwater is unclear.

Available groundwater data indicate a possible correlation between the areas that have been historically flooded and the extent of PFAS within the Oakey Creek Alluvium. The rate at which PFAS-impacted flood water could infiltrate to the underlying groundwater is controlled by a number of factors, including variability in the permeability of surface soils and sediments and the velocity of the flood waters. During a flood event, the coarse material is expected to be deposited on or immediately adjacent to Oakey Creek and finer grained sediments are transported further with the flood water.

2.2 Brymaroo Satellite Site

The subsections below provide summaries of the Brymaroo site and environmental setting, environmental investigations and the CSM.

2.2.1 Site Description

Table 2 Brymaroo Identification and Setting Summary

Element	Description
Base ID	1435
Location	Brymaroo located 22 km northwest of AACO and 3.5 km southwest of the Brymaroo Township. It is approximately 266 hectares in size, see **Figure 1**, **Appendix A**.
Regional Climate	The nearest meteorological station is at AACO, see **Table 1**.
Topography, geology and hydrogeology	Brymaroo is approximately 400 mAHD, and slopes to the northeast towards Cain Creek, which is located beyond the northern boundary and flows from the east to the west. Brymaroo is directly underlain by Tertiary Mains Range Volcanics that consists of alkali-olivine basalt, minor tuff, sandstone and mudstone.
Surface water	The nearest surface water body to Brymaroo is Cain Creek, located approximately 250 m to the northeast of the northeastern corner of Brymaroo. Cain Creek flows into Myall Creek, approximately 3 km to the north-west of Brymaroo. Myall Creek is a tributary of the Condamine River.
Current and Previous Land Use	It is approximately 266 hectares in size and is used for training in emergency landings and fire hazard training. Historically, Brymaroo is thought to have been used for agricultural purposes including grazing and grain production prior to being used as a World War II airfield (AECOM 2018d).
Surrounding Landuses	The land surrounding the site is used for agricultural purposes.

2.2.2 Source Areas

The detailed site investigation (DSI) (AECOM, 2018d) identified the following potential sources of PFAS at Brymaroo:

- AFFF use at the refuelling concrete pads.
- Release from firefighting infrastructure, discharge events, response to incidents or training.

3.0 Sampling and Analytical Methodology

3.1 Sampling Locations

The sampling events conducted in October 2020 and March/April 2021 included the collection of selected groundwater, surface water and sediment samples from across the Management Area and Brymaroo. On-Base and off-Base groundwater sampling locations at AACO are shown in **Figure 4** and **Figure 5** respectively in **Appendix A**. Groundwater sampling locations at Brymaroo are shown in **Figure 7**, **Appendix A**. Note that some off-Base sampling locations are not shown for privacy reasons.

3.2 Summary of OMP works 2020-2021

A summary of the monitoring works implemented as part of the SAQP (AECOM, 2021a) between October 2020 and April 2021 is summarised in the subsections below:

3.2.1 October 2020 Sampling Event

- Monitoring works undertaken between 19 and 23 October 2020.
- On-Base sampling of groundwater from 34 monitoring wells in the Oakey Creek Alluvium aquifer.
- Off-Base sampling of 14 monitoring wells and residential bores monitoring the Oakey Creek Alluvium Aquifer[1].
- Off-Base sampling of four residential bore installed in the Walloon Coal Measures.

3.2.2 March / April 2021 Sampling Event

- Monitoring works undertaken between 23 March and 28 April 2020.
- On-Base sampling of groundwater from 34 monitoring wells in the Oakey Creek Alluvium aquifer.
- Off-Base sampling of groundwater from 39 monitoring wells and residential bores monitoring the Oakey Creek Alluvium Aquifer.
- Off-Base sampling of groundwater from 11 monitoring wells monitoring underlying aquifer units (Walloon Coal Measures or Mains Range Volcanics) at locations across the Management Area.
- Surface water sampling at 21 locations and sediment sampling at 22 locations (including drainage channels, Oakey Creek, Doctor Creek and Westbrook Creek).
- Sampling of 10 monitoring wells in the Main Range Volcanics aquifer from Brymaroo.

3.3 Sampling and Analysis Methodology

Refer to the SAQP (AECOM, 2021a) for the sampling methodology, data quality objectives (DQOs) including quality assurance (QA) and quality control (QC) parameters for field and laboratory programs. Refer to the factual reports (**Appendix D**) for QA/QC discussion and fit for purpose data.

3.4 Deviations from SAQP

The works undertaken over the initial 12-month monitoring period complied with the SAQP (AECOM, 2021a), with some minor exceptions as detailed in the subsections below. Deviations from the sampling program specified in the OMP (Defence, 2019) and SAQP are documented in the SAQP (AECOM, 2021a).

3.4.1 October 2020 Sampling Event

A total of 48 of the 49 monitoring wells located on and off-Base identified in the SAQP were sampled. Access to residential bore MW084, located 2.5 km south of AACO, was declined and this was replaced

[1] Note that the privately-owned groundwater residential bores are likely to be screened in the Oakey Creek Alluvium aquifer due to the higher yield in this aquifer.

by a nearby bore, MW056, which is located approximately 160m west-north-west of MW084. The SAQP was updated accordingly for future sampling events. Three additional monitoring wells screened in the Walloon Coal Measures were sampled during the sampling event to resample wells that recorded detectable concentrations of 6:2 fluorotelomer sulphonate (FTS) in the March / April 2020 sampling event.

There was insufficient groundwater in three monitoring wells for Hydrasleeve sampling (MW167, MW236 and MW300). Groundwater samples at these locations were collected by bailer.

3.4.2 March / April 2021 Sampling Event

AACO

A total of 94 monitoring wells / bores at AACO were sampled. Three monitoring wells / bores identified in the SAQP were not sampled for the following reasons:

- MW020 was not sampled as the stakeholder declined access.
- MW031 and MW160 were not sampled as the stakeholders did not respond.

There was insufficient groundwater in two monitoring wells for Hydrasleeve sampling (MW167 and MW242). Groundwater samples were collected by bailer.

A total of 21 out of the 22 surface water locations were accessible and able to be sampled. Location SW057 was dry. All of the sediment sampling locations were accessible and able to be sampled.

Brymaroo

A total of 10 out of 13 monitoring wells at Brymaroo were sampled. Three monitoring wells identified in the SAQP were not sampled for the following reasons:

- MW001 was dry.
- MW005 and MW012 were lost (presumed destroyed).

3.5 Changes to the Monitoring Network

A summary of the findings related to the condition of/and or access to the monitoring network from the sampling events following the March / April 2021 sampling event is provided below.

Physical maintenance

- Stick-up cover for MW242 is broken. Defence to contact leaseholder to request repair.
- Gatic cover for MW003 (at Brymaroo) requires minor repair.

Access issues

- MW031 was not sampled as the property owner could not be contacted. Contact will be attempted during the next sampling event.
- MW020 was not sampled as the property owner declined access.
- MW160, to the west of the Management Area, was not sampled as the property owner could not be contacted. Monitoring will be discontinued. If first-time detections are recorded at MW147 or MW151 in the future, a new monitoring well will be required to replace MW160. There were no first-time detections during the monitoring period.
- MW001 (Brymaroo) was dry and will be reinspected during the next sampling event.
- MW005 and MW012 (both Brymaroo) have been lost and future monitoring results will inform the need to replace these two monitoring wells. See **Section 8.2.4**.
- SW057 (Drain 3) was dry and should be reinspected during the October 2021 sampling event.

Further details are provided in the sample event factual reports in **Appendix D**. Excluding the locations listed below, there were no changes to the monitoring network condition or access. None of these changes are considered to have affected data integrity.

4.0 Quality Assurance and Quality Control

Data validation pertaining to the data in this report has been previously completed and discussed within the individual factual reports listed below:

- *Sampling Event Factual Report - October 2020. Army Aviation Centre Oakey* (AECOM, 2021b).
- *Sampling Event Factual Report – March/April 2021. Army Aviation Centre Oakey* (AECOM, 2021c).

Data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that the reported field and analytical results in the two sampling events (October 2020 and March / April 2021) are representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of the factual and annual interpretive reports.

All data collected from the two sampling events has been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (DCMM) (Defence, 2018) requirements, in particular, Annex L Guidance on Data Management. Refer to the sampling event factual reports in **Appendix D** for further information.

5.0 Assessment Criteria

Adopted screening criteria references national guidance in the form of the PFAS National Environmental Management Plan (NEMP), (Heads of Environmental Protection Agencies (HEPA), 2020), Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance. At the time of preparing this report, a number of guidance documents were available in Australia including:

- PFAS NEMP, version 2.0 (HEPA 2020).
- Department of Health, 2019. Health Based Guidance Values for PFAS for use in site investigations in Australia. 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).

The adopted PFAS screening criteria used to assess the data generated as part of the OMP are presented in **Table 3** below.

Table 3 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water - groundwater	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All groundwater results were compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values are from PFAS NEMP (2020). *All surface water results were compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	The values are from the PFAS NEMP (HEPA, 2020). The 99% level of protection has been applied for slightly to moderately disturbed ecosystems. This approach is generally adopted for chemicals that bioaccumulate and biomagnify in wildlife. For the purposes of preliminary screening of analytical water results, the laboratory LOR will be adopted rather than sole use of the criteria value. *All surface water and groundwater results were compared to these criteria.*
	PFOA	19 µg/L	

It is noted that at the time this report was prepared, no HEPA (2020) endorsed criteria were available for PFAS in sediment.

6.0 Contextual and Ancillary Information

Defence is undertaking a range of management activities at AACO to remove PFAS from the environment and limit PFAS migration pathways. These are described in the subsections below based on information provided by Defence.

6.1 Historical Activities

6.1.1 Drain Excavation and Off-Base Disposal

In 2018 Defence excavated sediment from open drains at AACO to reduce the migration of PFAS contamination from the sediment to surface water and groundwater. Approximately 12,000 m^3 of sediment was excavated and disposed of in an off-Base disposal facility in accordance with Queensland guidelines. The sediment was replaced with new material. See **Figure 3**, **Appendix A** for the locations of the drainage channels.

6.1.2 Soil Remediation at the Former Fire Station

Between 2018 and 2019 the area of the former fire station was redeveloped with a new Air Traffic Control Tower built. PFAS contaminated soil excavated during the construction of the foundations of the new building was treated prior to off-Base disposal in accordance with Queensland guidelines. The location of the former fire station is shown on **Figure 3**, **Appendix A**.

6.2 Current Activities

Two groundwater remediation projects and one soil remediation project are currently taking place at AACO. These are described below. The best utilisation of the groundwater treatment plants will be assessed by Defence during 2022.

6.2.1 Former Fire Station Water Treatment Plant

Since September 2017, a water treatment plant has been operating at AACO extracting water from the Oakey Creek Alluvium aquifer in the area of the former fire station (see **Figure 3**, **Appendix A** for the location of the former fire station). The plant is treating contaminated groundwater on the Base and reinjecting the treated water back into the aquifer to remove PFAS from the environment.

6.2.2 Fire Training Area Water Treatment Plant

Since mid-2019, a second water treatment plant has been operating to extract and treat groundwater from the Oakey Creek Alluvium aquifer near the current fire training facility (see **Figure 3**, **Appendix A** for the location of the fire training ground). This plant uses foam fractionation/separation technology which involves generating foam from affected groundwater. The foam, containing PFAS, is collected from the surface and treated. Following treatment, the water is irrigated for infiltration.

6.2.3 Soil Remediation at the Former Fire Training Area

In April 2021 soil remediation activities commenced at the former fire training area[2] in accordance with the remediation action plan (WSP, 2019). The objective of the remediation is to reduce to the extent practicable the mass of PFAS in soil at the former fire training area. The remediation works include the excavation of approximately 4,600 m^3 of PFAS contaminated soils from varying depths (between 0.3 and 1.5 metres below ground level) across the sources area followed by stabilisation and landfill disposal. The excavation will be infilled with benign material that will be compacted in manner so that it acts as a low permeability layer that restricts rainfall infiltration into residual contamination in underlying soils. The works are anticipated to be completed in October 2021.

[2] The former fire training area was referred to as a depleting source area in the ESA (AECOM, 2017a) to reflect the fact that AFFF was used during historical activities and this use was not ongoing. Source areas where AFFF use is currently occurring are referred to as active source areas. The AFFF currently in use in the active source areas does not contain PFOS, PFHxS and PFOA as active ingredients. The source area location map (Figure 3 in Appendix A) identifies the depleting and active source areas.

6.2.4 PMAP Delivery

A two-year program of work commenced in late 2020 that will lead to the development of remediation action plans for soil and groundwater for the main source areas at AACO (other than the former fire training area). The program includes targeted soil investigation at six source areas to characterise the nature and extent of contamination in soil at these locations and a mass flux study to assess the mass of PFAS leaving the Base through groundwater and surface water drainage channels. The project is currently in the data acquisition stage. A PMAP implementation plan has been developed to guide the implementation of the remediation action plans.

6.3 Current and Future Planned Activities

Construction projects that are currently occurring or are planned at AACO potentially requiring management of PFAS contaminated soil are identified in **Table 4** below.

Table 4 Summary of Current and Planned Activities at AACO

Management	Projects	Details	Contractor	Dates
CFI	Mid Term Refresh	Construction phase	FKG - KPMG	Starting 07/21
	Joint Health Command- Medical Centre Oakey	Construction phase	Badge Construction – Aurecon	1/20-3/22
	Oakey Apache	Design phase	RPS	TBA
PDS Support	Oakey Commercial Centre	Construction in progress	FKG - Aurecon	Starting 03/21
	B026 Refurb and Iroquois Shelter	Construction / refurbishment	FKG - JLL Augility	Starting 06/21
	Soil HRF Remediation	PFAS soil remediation	GHD - Enviropacific	Starting 04/21
Spotless	Oakey Civil Works	Gravel overlay to tracks	FKG	06/21-09/21

6.4 Climate and Extreme Weather Events

Table 5 summarises the rainfall activity during the sampling events for the weather station at Oakey (Station ID 041359) and the occurrence of wet weather events (days with rainfall > 15 mm).

Table 5 Rainfall During Monitoring Period

Sampling Event	Rainfall over monitoring period from weather station 041359	Wet weather events during the monitoring period (days with rainfall > 15 mm)
19-23 October 2020 (AACO)	24.8 mm	22 October 2020 (15.6 mm)
23 March 2021 (AACO)	32.6 mm	23 March 2021 (32.6 mm)
12-28 April 2021 (AACO and Brymaroo)	1.6 mm	None

No extreme weather events occurred during the monitoring period. It is noted that average rainfall for October 2020 (96.2 mm) and March 2021 (146.6 mm) was higher compared to the long-term averages for Oakey (57.9 mm for October and 52.8 mm for March). Rainfall in other months during the 12-month period were similar to the average with the exception of drier months in September 2020 (1.2 mm), November 2020 (3.0 mm) and February 2021 (9.4 mm).

Areas within the AACO Management Area are at risk from flood events (AECOM, 2017a). Floodwater spilling over drains and Oakey Creek across the Management Area has the potential to deposit PFAS affected runoff onto adjacent soil and vegetation and potentially infiltrating to groundwater. The ponded flood water has the potential to increase groundwater recharge potential, albeit temporarily, after flooding events.

7.0 Monitoring Data Summary

7.1 Groundwater

7.1.1 Groundwater Elevations

Groundwater elevations recorded during monitoring well gauging for the sampling events are summarised in **Table 6** below with full results presented in **Table T1**, **Appendix B**. The range in groundwater elevations in the Oakey Creek Alluvium aquifer in both sampling events are similar.

Table 6 Depth to Groundwater and Groundwater Elevation

Base	Aquifer	October 2020		March / April 2021	
		Range in hydraulic head (mAHD)	No of wells	Range in hydraulic head (mAHD)	No of wells
AACO	Oakey Creek Alluvium	384.296 to 401.034	40	392.755 to 408.398	58
	Walloon Coal Measures	367.606 to 393.714	4	340.153 to 393.194	7
Brymaroo	Main Range Volcanics	Not gauged	0	400.435 to 405.125	11

7.1.2 Groundwater Flow Directions

7.1.2.1 AACO

Inferred groundwater contour maps for AACO (Oakey Creek Alluvium aquifer) for the monitoring periods were presented in the sampling event factual reports (AECOM, 2021b and AECOM, 2021c) and are presented as **Figure 8** and **Figure 9** in **Appendix A**. The inferred groundwater contours for the Oakey Creek Alluvium aquifer for both monitoring periods were similar with the general groundwater flow direction from east to west across the Management Area. Groundwater in the Oakey Creek Alluvium aquifer is inferred to flow in a westerly direction across AACO, while in off-Base areas to the south, the flow direction is inferred to be in a north westerly direction.

Based on the limited groundwater elevation data for the Walloon Coal Measures, the groundwater flow direction is inferred to be towards the west.

7.1.2.2 Brymaroo

The inferred groundwater contour map for the March/April 2021 sampling event at Brymaroo (**Figure 10** in **Appendix A**) indicated that the horizontal gradient in the Main Range Volcanics was relatively flat with flow radially directed from the infrastructure area to the northwest and northeast. The groundwater flow direction was inferred to be towards the northwest in the western portion of the infrastructure area and towards the northeast in the eastern portion of the infrastructure area. This is consistent with the previous monitoring events in 2018 (AECOM, 2018c), 2019 (AECOM, 2019b) and 2020 (AECOM, 2020a).

7.1.3 Groundwater Quality Parameters Field Measurements

7.1.3.1 AACO

A summary of the water quality parameters in the different aquifer units measured during sample collection at AACO in October 2020 and March/April 2021 are presented in **Table 7** and **Table 8**. The

full results are presented in **Table T1**, **Appendix B** and in the sampling event factual reports in **Appendix D**.

Table 7 Quality Parameter Field Measurements in Groundwater from the Oakey Creek Alluvium at AACO

	DO (mg/L)		EC (µS/cm)		pH		Eh (mV)		Temp (°C)	
	Oct-20	Apr-21	Oct-20	Apr-21	Oct-20	Apr-21	Oct-20	Apr-21	Oct-20	Apr-21
No.	48	75	48	75	39	74	48	74	48	75
Min.	0.47	0.0	312	396	6.76	4.75	96.2	-7.8	17.0	18.1
Max.	5.18	5.97	7236	13808	8.38	12.07	597.2	510.5	27.4	30.0
Mean	2.19	4.67	2212	3610	7.36	7.5	351	282.4	22.14	23.3

Notes: DO is dissolved oxygen, EC is electrical conductivity, Eh is oxidation reduction potential, Temp is temperature.

Table 8 Quality Parameter Field Measurements in Groundwater from the Walloon Coal Measures at AACO

	DO (mg/L)		EC (µS/cm)		pH	Eh (mV)		Temp (°C)	
	Oct-20	Apr-21	Oct-20	Apr-21	Apr-21	Oct-20	Apr-21	Oct-20	Apr-21
No.	4	7	4	7	7	4	7	4	7
Min.	0.32	0.02	888	396	7.1	-39.5	40.4	21.9	22.5
Max.	0.48	2.23	2260	8642	12.63	252.5	252	22.5	27.9
Mean	0.4	0.73	1560	2966	9.66	113.4	150	22.2	25.24

Based on the mean groundwater quality parameter results over the sampling period, the aquifer units at AACO can be characterised as follows:

- **Oakey Creek Alluvium** is near neutral, moderately oxygenated, mildly reducing and brackish.
- **Walloon Coal Measures** is alkaline, poorly oxygenated, moderately reducing and brackish.

The aquifer parameters recorded in these sampling events are consistent with previous results (AECOM, 2017a, 2018b, 2019a, 2019b, 2020a, 2020b, 2021d).

7.1.3.2 Brymaroo

The water quality parameter results in groundwater at Brymaroo in April 2021 is summarised in **Table 9**.

Table 9 Quality Parameter Field Measurements in Groundwater from the Mains Range Volcanics at Brymaroo in April 2021

	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)	Temp (°C)
No.	9	9	9	9	9
Min.	0.04	1084	7.37	117.7	20.4
Max.	1.74	2467	8.62	296.8	27.3
Mean	0.62	1714	8.00	218.1	24.0

Based on the mean groundwater parameter results, the Main Range Volcanics aquifer beneath Brymaroo can be characterised as near neutral, poorly oxygenated, moderately reducing and brackish.

This is consistent with previous observations (AECOM 2018d, 2019b, 2020b, 2021d). There were no visual or olfactory observations of contamination during the sampling of monitoring wells at Brymaroo.

7.2 Groundwater Analytical Results

A summary of analytical results from the OMP works during the monitoring period is provided in **Table 10** below. Further information is presented in the OMP sampling event factual reports provided in **Appendix D**.

Groundwater laboratory PFAS analytical results collected at the Base since 2013 are presented in **Table T2** in **Appendix B** for AACO and **Table T3** in **Appendix B** for Brymaroo.

Table 10 Summary of PFAS in Groundwater During the Monitoring Period

Sampling Event	No. of Locations Analysed	Compound	Concentration Range (µg/L)	No. of Sample Locations with Concentration > LOR
October 2020	52	PFOS	<0.01 – 282	43
		PFOA	<0.01 – 8.44	37
		PFOS+PFHxS	<0.01 – 362	44
April 2021 (AACO)	84	PFOS	<0.01 – 304	61
		PFOA	<0.01 – 386	49
		PFOS+PFHxS	<0.01 – 1030	62
April 2021 (Brymaroo)	10	PFOS	<0.01 – 4.35	6
		PFOA	<0.01 – 1.33	5
		PFOS+PFHxS	<0.01 – 13.0	6

Groundwater sample results for sum of PFHxS and PFOS in groundwater are presented in the following figures in **Appendix A**:

- **Figure 11** - Oakey Creek Alluvium at AACO in October 2020
- **Figure 12** – Oakey Creek Alluvium at AACO in March / April 2021
- **Figure 13** – Walloon Coal Measures at AACO in March / April 2021
- **Figure 14** – Main Range Volcanics at Brymaroo in March / April 2021

The concentration sum of PFHxS and PFOS are described by the colours used in these figures. For example, sum of PFHxS and PFOS in groundwater is as follows:

- Less than limit of reporting (LOR): less than the limit of reporting for the laboratory analysis
- LOR to 0.07 µg/L
- 0.07 to 10 µg/L
- 10 to 50 µg/L
- > 50 µg/L

These descriptors represent concentration ranges.

Furthermore, historical groundwater concentrations of sum of PFHxS and PFOS have been displayed graphically on temporal trend graphs by area of interest in **Appendix C** for the locations shown in **Table 11**.

Table 11 Temporal Trend Graph by Area of Interest

Graph ID	Area of Interest	Groundwater monitoring well
Chart C1	On-Base: Sources Areas	MW167, MW193, MW230, MW232, MW236, MW253, MW299
Chart C2	Former Fire Station	MW185, MW201, MW202, MW203, MW204, MW205
Chart C3	Off-Base: < 1 km of Southern Base Boundary	MW020, MW031, MW032, MW132, MW268
Chart C4	Off-Base < 1 km Southwestern Corner of AACO	MW021, MW022, MW028, MW113, MW122, MW157, MW257, MW266, MW276, MW296
Chart C5	Off-Base: 1 – 2 km of Southwestern Corner of AACO	MW006, MW019, MW038, MW107, MW134, MW255, MW262, MW272
Chart C6	Brymaroo	MW001, MW002, MW003, MW004, MW005, MW006, MW007, MW008, MW009, MW010, MW011, MW012, MW013

In addition to PFAS, ten groundwater samples were analysed during the October 2020 sampling event for the following geochemical parameters:

- Major ions (sodium, calcium, magnesium and potassium) and anions (chlorine, sulphate, bicarbonate, carbonate)
- Total suspended solids (TSS)
- Dissolved organic carbon (DOC).

The analytical results are presented on **Table T4** with a piper plot for major ions presented as **Chart C7** in **Appendix C**.

The non-PFAS analysis was conducted to provide data for use in remediation projects. Following a review of the SAQP in Q1 2021, the collection and analysis of samples for non-PFAS analytes is not justified at the Base to meet the requirements of the SAQP and was removed from the analytical schedule.

7.3 Surface Water Results

7.3.1 Surface Water Quality Parameter Field Measurements at AACO

Surface water quality parameters field measurements were measured prior to collecting surface water samples. The stabilised readings from the March/April 2021 sampling event are presented in **Table T5**, **Appendix B** and in the sampling event factual report (**Appendix D**). A summary of the water quality parameters in the different creeks are presented in **Table 12**.

Table 12 Summary of Surface Water Quality Parameter Field Measurement Results

Parameter	Units	Oakey Creek (n = 10)		Doctor Creek (n = 1)	Westbrook Creek (n=1)
		Range	Mean	Result	Result
pH	-	6.8 – 7.99	7.5	7.71	9.18
Temperature	ºC	20.9 – 28.0	23.2	28.9	21.7
Dissolved Oxygen	mg/L	1.6 – 6.96	4.2	8.71	8.87
Redox Potential	mV	233 – 348	299	289.9	292.5
Electrical Conductivity	µS/cm	169 – 1302	434	450	1127

Based on the averaged results the creek water can be characterised as near neutral to slightly alkaline, well oxygenated, mildly reducing and fresh. This is broadly consistent with previous results (AECOM, 2017a, 2018b, 2019a, 2019b, 2020b, 2021d).

7.3.2 Surface Water Analytical Results

Surface water analytical results for March / April 2021 are included in **Table T6** in **Appendix B** and monitoring activities are summarised in the March / April 2021 sampling event factual report in **Appendix D**. A summary of surface water analytical results is provided in **Table 13** below.

Table 13 Summary of PFAS in Surface Water During the Monitoring Period

Sampling Event	No. of Locations Analysed	Compound	Concentration Range (µg/L)	No. of Sample Locations with Concentration > LOR*
March / April 2021 (AACO)	21	PFOS	<0.01 – 1.06	17
		PFOA	<0.01 – 0.06	13
		PFOS+PFHxS	<0.01 – 3.18	12

Note: LOR is limit of reporting

Surface water sample results from March / April 2021 are presented in **Figure 15** in **Appendix A**. Historical surface water concentrations of PFOS have been displayed graphically on temporal trend graphs, see **Chart C8** and **Chart C9** in **Appendix C**.

7.4 Sediment Analytical Results

Sediment samples were co-located and collected with surface water samples during the March / April 2021 sampling event. Sediment PFAS analytical results are presented in **Table T7** in **Appendix B** and **Figure 16** in **Appendix A**. Monitoring activities are summarised in the March / April 2021 sampling event factual report in **Appendix D**. A summary of sediment analytical results is provided in **Table 14** below.

Table 14 Summary of PFAS in Sediment During the Monitoring Period

Sampling Event	No. of Locations Analysed	Compound	Concentration Range (mg/kg)	No. of Sample Locations with Concentration > LOR
March / April 2021 (AACO)	22	PFOS	<0.01 – 0.152	20
		PFOA	<0.01 – 0.0017	12
		PFOS+PFHxS	<0.0002 – 0.157	20

8.0 Discussion / Interpretive Analysis

8.1 Hydrogeology

The inferred groundwater flow directions for each aquifer (Oakey Creek Alluvium and Walloon Coal Measures) at AACO Management Area are consistent with the regional groundwater flow direction (east to west) and the elevations observed in previous investigations (AECOM, 2016a, 2017a, 2018b, 2019a, 2019b, 2020a, 2020b, 2021d).

8.2 Groundwater Results

Groundwater results for sum of PFHxS and PFOS compared to assessment criteria are provided in **Figure 11**, **Figure 12** and **Figure 13** in **Appendix A**.

PFAS concentrations were generally similar to previous (historical) results undertaken since the ESA (AECOM, 2017a).

8.2.1 On-Base

The highest PFAS concentrations in March 2021 were detected in monitoring wells located down-hydraulic gradient of the active and depleting source areas identified during the previous investigations. The maximum concentrations of sum of PFHxS and PFOS in March / April 2021 at each source areas were as follows:

- Former fire training area (in Area North): 25.0 µg/L (MW253)
- Former fire station and foam training area (in Area B3): 386 µg/L (MW202)
- Former fuel compound and hot refuelling point (in Area F1): 25.4 µg/L (MW235)
- Hot refuel area (in Area A2) and Spent AFFF recovery UST (Asset A83 in Area A1): 5.3 µg/L (MW172)
- Spent AFFF recovery UST (Asset S12 in Area S1): 108 µg/L (MW300)
- Spent AFFF recovery UST (Asset C59 in Area C1): 42.9 µg/L (MW193)
- Active AFFF storage and decanting areas (in Area D2): 24.7 µg/L (MW232)
- Current fire training area (Asset D20 in Area D2): 38.0 µg/L (MW222).

PFOS, PFOA or PFHxS concentrations were detected in monitoring wells down-hydraulic gradient from the identified PFAS source areas listed above and suggest that the groundwater impacts are associated with these areas. With one exception, PFAS concentrations did not exceed previous maximum concentrations in April 2021. The exception was the active AFFF storage and decanting area in D2 where the concentration of sum of PFHxS and PFOS (24.7 µg/L at MW232) was approximately 25% higher than previously recorded at this location. This is considered to relate to leaching of PFAS from contaminated soil at this location.

The previous monitoring event reports (AECOM, 2018b, 2019a, 2019b, 2021d) identified that PFAS concentrations in groundwater samples from two monitoring wells (MW229 and MW167[3]), located away from the potential source areas, recorded PFAS concentrations at similar magnitudes to the identified potential source areas (39.8 µg/L at MW229 and 8.2 µg/L at MW167 in April 2021). This may indicate localised source areas at these locations or may be related to migration from up-hydraulic gradient source areas.

8.2.2 Off-Base

The inferred extent of PFAS impacts from 2017 are indicated to the west, southwest and south of the Base as shown in **Figure 17** (in **Appendix A**). The groundwater concentrations in the wells and bores in the monitoring period are generally similar to the plume extents presented in the 2017 ESA (AECOM,

[3] MW229 is located on the western side of Building C23, a laboratory/workshop used for non-destructive testing. MW167 is located next to the bulk fuel facility (Building A31).

2017a) (which was based on maximum concentrations detected in the period 2014 to 2017) and subsequent monitoring event reports (AECOM, 2018b, 2019a, 2019b, 2021d).

Table 15 below summarises the extent of PFAS in different portions of the Management Area and identifies changes compared to previous results.

Table 15 PFAS in Oakey Creek Alluvium Off-Base

Area	Extent of PFAS in the Oakey Creek Alluvium aquifer	Bores / wells
<1 km of southern Base boundary	The extent of PFAS in groundwater is unchanged compared to previous results. This includes areas adjacent to the drainage channels and Oakey Creek. The highest PFAS (sum of PFHxS and PFOS) concentrations recorded during in April 2021 was at MW276 (19.6 µg/L) which is located approximately 1 km to the south of AACO and 1 km to the west, and down hydraulic gradient, of drainage channel 1. The highest PFAS concentrations historically detected have been at MW020 located close to drainage channel 1, however this bore (and MW031) could not be sampled during the monitoring period. Some variability in PFAS concentrations is present in this area as PFAS were not detected above the limit of reporting in MW132. Sum of PFHxS and PFOS concentrations in other bores (MW032, MW257, MW266, MW267, MW268) were in the range 0.04 to 7.2 µg/L.	MW020, MW031, MW032, MW132, MW257, MW266, MW267, MW268, MW276
<1 km of south-western corner of AACO	With the exception of an area located less than 250 m beyond the western Base boundary, the extent of PFAS in groundwater is unchanged compared to previous results. PFAS concentrations were relatively higher in the southern portion of the western AACO boundary (11.1 µg/L sum of PFHxS and PFOS at MW157 and 2.1 µg/L at MW122), relatively lower in the central portion of the western Base boundary (0.5 µg/L at MW113) and were not reported above the limit of reporting in bores further north and west (MW114 and MW118).	MW113, MW118, MW122, MW157
1-2 km of southwestern corner of AACO	The extent of PFAS in groundwater is unchanged compared to previous results with similar concentrations detected in the samples from nine bores / wells collected in the monitoring period compared to the previous results. Previously, an increasing concentration was noted in groundwater from a bore (MW134) and a monitoring well (MW262) located within several hundred metres of each other in the southwestern portion of the Management Area and down-hydraulic gradient (to the northwest) of the former landfill. However, PFAS concentrations in groundwater samples collected from both wells in April 2021 had decreased compared to March 2020 results. The concentration of sum of PFHxS and PFOS in MW134 (located approximately 2 km southwest of the Base) in April 2021 (0.04 µg/L) did not exceed the NEMP drinking water guideline value. Sum of PFHxS and PFOS in MW262 was 0.5 µg/L in April 2021 compared to 0.62 µg/L in March 2020. The furthest extent of PFAS in groundwater, related to the Council landfill source, is considered to be close to the location of MW134. The increasing concentrations at MW262 and MW134 between 2019 and 2020 are likely to reflect the migration of PFAS in groundwater in this portion of the Management Area. The fluctuation in PFAS concentration in	MW021, MW022, MW134, MW255, MW262, MW272, MW274, MW280, MW296

Area	Extent of PFAS in the Oakey Creek Alluvium aquifer	Bores / wells
	2020/2021 may reflect seasonal effects on the migration of PFAS from the former Council landfill or may indicate that the concentrations have stabilised.	
>2 km to the west and southwest of AACO	PFAS was detected in groundwater in a number of monitoring wells and residential bores to the west and southwest of the southwestern corner of AACO. The most down-hydraulic gradient well with detected PFAS concentrations in the monitoring period was MW019, which recorded 0.03 µg/L sum of PFHxS and PFOS in both monitoring events (in October 2020 and April 2021). MW019 is located approximately 2.3 km to the west of the south-western corner of AACO. The leading edge of the area of PFAS in groundwater is likely to be close to this bore. Comparison with the plume extent shown in **Figure 17**, **Appendix A**) indicates that the PFAS plume extents further west compared to 2017. PFAS has not been detected in groundwater in sentinel bores located further to the west outside of the Management Area (MW147 and MW151). PFAS was not detected in groundwater in the most distant wells (MW264 and MW283) to the southwest (4.5 km to the southwest of the southwestern corner of AACO) indicating that PFAS groundwater contamination does not extend to this portion of the Management Area.	MW003, MW019, MW038, MW114, MW147, MW149, MW151, MW160, MW264, MW281, MW282, MW283
South-east of AACO	The extent of PFAS in groundwater is unchanged compared to previous results. The results show PFAS was not detected in a well <300 m from AACO (MW270). PFAS was detected in groundwater in MW294, located 1 km south of AACO, on the northern side of Oakey Creek at a concentration of 1.3 µg/L sum of PFHxS and PFOS. PFAS has been consistently detected in groundwater at MW292 (at 0.3 µg/L sum of PFHxS and PFOS) located adjacent to the southern side of Oakey Creek. Groundwater results from two groundwater monitoring wells (MW278 and MW279) on the southern side of Oakey Creek, did not report PFAS concentrations above the limit of reporting, indicating PFAS groundwater contamination does not extend to the southeast (based on the current dataset).	MW270, MW278, MW279, MW292, MW294
>1 km of AACO to the south	The extent of PFAS in groundwater in this area is unchanged compared to previous results. Monitoring results (e.g. AECOM, 2017a, 2018b, 2019a, 2019b, 2021d) indicated that the area to the south of the railway line, and east of Oakey Creek generally had PFAS concentrations in groundwater that were close to, or not reported above, the limit of reporting. A sub-area located to the southeast of the intersection of Campbell and Lorrimer Street (2.5 km south of AACO) has been identified with 0.45 µg/L sum of PFOS and PFHxS at MW056 in April 2021. Due to the general non-detection of PFAS in groundwater in bores between the AACO and this area, the presence of PFAS potentially relates to the presence of other historical off-Base local sources along Lorrimer Street, as identified in AECOM (2015a). For example, an area potentially used for off-Base firefighting training by non-Defence personnel	MW056, MW285

Area	Extent of PFAS in the Oakey Creek Alluvium aquifer	Bores / wells
	is located immediately to the east, which is hydraulically upgradient. PFAS was not detected in April 2021 in the groundwater sample from MW285 located approximately 4.5 km to the south of the AACO. Historically, PFAS has been detected on two occasions in samples from this well at concentrations close to the limit of reporting.	
North east of AACO	PFAS was not detected in the background monitoring well (MW265) in April 2021.	MW265

8.2.3 PFAS in Walloon Coal Measures

Overall, the sampling results in the wells monitoring the Walloon Coal Measures aquifer in the monitoring period are consistent with historical results reported between 2017 and 2020.

Since April 2018, PFAS has been detected in a well monitoring the Walloon Coal Measures aquifer (MW269) close to drainage channel 1 and approximately 400 m to the south of AACO. MW269 has been monitored on six occasions and has shown stable concentrations with 0.08 µg/L and 0.14 µg/L sum of PFHxS and PFOS reported for monitoring events conducted in October 2020 and April 2021, respectively. It was reported that the detection of PFAS in this well could be related to conditions during the construction of the monitoring wells in this group. A purging event was completed in September 2018 to remove water containing PFAS in this bore (AECOM, 2018c). The results since the purging have generally been lower than the maximum concentration detected. The reduction in PFAS concentrations suggests that the detections are likely to be associated with the bore construction process and are not indicative of continuous or historical vertical migration to the Walloon Coal Measures aquifer.

PFAS was detected in groundwater samples from two other monitoring wells that are screened in the Walloon Coal Measures at concentrations close to the limit of reporting. These were MW291 and MW293 with 0.03 µg/L and 0.02 µg/L sum of PFHxS and PFOS, respectively. PFAS was detected in a sample from MW291 for the first time in April 2021. Detection of sum of PFHxS and PFOS in these wells will be verified in future monitoring events. Occasional low-level detections of PFAS (close to the limit of reporting) have been reported in groundwater samples collected from the Walloons Coal Measures aquifer since monitoring wells were installed in 2017. The detection of PFAS in these wells are not considered to represent a change in the risk profile.

Four wells (MW269, MW291, MW295, MW297) reported detectable concentrations of 6:2 FTS in March 2020 (in the range 0.09 to 0.5 µg/L). 6:2 FTS was detected in samples from MW291 and MW295 in both October 2020 and April 2021 sampling events with MW291 reporting 0.05 and 0.07 µg/L, respectively, and MW295 reporting 0.21 and 0.25 µg/L, respectively. These detections are considered anomalous as generally no other PFAS compounds have been detected (with the exception of PFOS which was detected at MW291 at 0.03 µg/L in April 2021). Leaching tests were conducted on the sampling equipment in April 2020 to check if the 6:2 FTS was associated with the equipment (as reported in AECOM, 2021d), however, no PFAS were detected in the rinsates undertaken of the sampling equipment. The reason for these continued detections is uncertain.

8.2.4 PFAS in Groundwater in Main Range Volcanics at Brymaroo

The extent of PFAS in groundwater in this area is unchanged compared to previous results. Most PFAS concentrations in April 2021 (see **Figure 14** in **Appendix B**) were similar to concentrations reported in April 2020. Overall, the results indicated an area of PFAS groundwater contamination is present in the infrastructure area with the highest concentrations present to the west and south of the western refuelling pad (MW003 and MW009). As PFAS was not reported above the limit of reporting in groundwater samples from monitoring wells downgradient of this area to the north, northwest and west in MW004, MW006, MW008, this indicates limited migration of PFAS in groundwater from the potential source areas in these directions.

There is no indication that the PFAS is migrating in groundwater across the property boundaries. There is potential for future changes in the magnitude and distribution of the contamination due to ongoing migration from potential source areas.

The main change in recent monitoring results was the increase in PFAS concentrations in April 2020 at MW010, located to the north of the infrastructure area. Sum of PFHxS and PFOS increased from <0.01 µg/L in 2019 to 1.18 µg/L in 2020, however, this decreased to 0.84 µg/L in April 2021. This change may indicate the migration of PFAS towards the northeast, which is the inferred groundwater flow direction at this location. As there are no monitoring wells to the northeast beyond MW010, the extent of the area of PFAS groundwater contamination in this direction is not known. The groundwater concentrations appear to have stabilised. Due to the distance to the site boundary (>400 m), the limited extent of PFAS in groundwater in other directions (<200 m) and the low hydraulic gradient of the Main Range Volcanics aquifer, this data gap is considered to be of low importance. Ongoing monitoring will indicate the longer term trend in PFAS concentrations in groundwater at the location of MW010.

Two groundwater monitoring wells were lost in 2020, MW005, a sentinel well to the northwest and MW012 within the infrastructure area. Although the loss of MW005 provides a small gap in the monitoring network, it is considered that the other monitoring wells (MW004 and MW006) provide sufficient coverage in this portion of Brymaroo at the present time. The loss of MW012 is not considered to significantly reduce understanding of contamination distribution in the infrastructure area with sufficient coverage provided by nearby monitoring wells.

8.3 Groundwater Geochemistry

A piper plot showing major ion results in groundwater from the AACO Management Area is presented in **Chart C7** in **Appendix C**.

The chart shows that groundwater in the Oakey Creek Alluvium is of a sodium-potassium type with some outliers. The groundwater is dominantly sodium with magnesium concentrations correlating with sodium concentrations. This is consistent with the findings of previous reports (AECOM 2017a, 2018b, 2019a, 2019b, 2021d). The geochemical profile is possibly related to the dissolution of evaporite and carbonate minerals as well as ion exchange processes occurring within the Oakey Creek Alluvium.

Groundwater in the Walloon Coal Measures is noticeably different from the Oakey Creek Alluvium with high hydroxide and low magnesium concentration, indicating that there is limited connectivity between the Walloon Coal Measures and the overlying aquifers.

8.4 Groundwater Temporal Trends

Overall, evaluation of the trends in groundwater concentration show variability (i.e. mix of trends) in PFAS concentrations in groundwater on- and off-Base. These trends are consistent with the findings from the 2017 ESA (AECOM, 2017a) and the previous AIR (AECOM, 2021d).

8.4.1 On-Base Source Areas

Historical data have been evaluated using a manual screening approach. Groundwater trends for sum of PFHxS and PFOS have been evaluated for selected wells in close proximity to potential on-Base source areas, see **Chart C1** (multiple source areas) in **Appendix C**.

The dataset indicates variability in sum of PFHxS and PFOS concentrations close to some of the source areas between 2016 and 2021. For example, groundwater sum of PFHxS and PFOS concentrations in the area of the spent AFFF tank in S1 (MW299) ranged between 18 and 110 µg/L with groundwater concentrations in the former firefighting training area (MW253) ranging between 25 and 121 µg/L. Groundwater in other source areas including the former fuel compound in F1 (MW236), current fire training area in D2 (MW230), spent UST in C1 (MW193) and AFFF storage area in D2 (MW232) have shown generally stable concentrations, see **Chart C1** in **Appendix C**.

8.4.2 On-Base: Former Fire Station

Groundwater trends for sum of PFHxS and PFOS are presented in **Chart C2** in **Appendix C**. Some of the monitoring wells (e.g. MW202) have shown variability with sum of PFHxS and PFOS fluctuating by up to one or two orders of magnitude.

8.4.3 Off-Base: Bores less than 1 km of the southern Base Boundary

The changes in sum of PFHxS and PFOS concentrations in bores and monitoring wells sampled to the south of AACO since 2013 have continued to exhibit generally stable concentrations (MW031, MW032, MW268) or variable concentrations (MW020, MW132), where there have been periods of increasing and periods of decreasing concentrations. Concentrations in April 2020 and April 2021 in samples from MW132 were close to, or below the limit of reporting, which contrasts with concentrations reported between 2014 and 2019 which were in the range 4.7 to 26.8 µg/L. Refer to **Chart C3** in **Appendix C**.

8.4.4 Off-Base: South West of AACO, within 1 km of the Southern Base boundary

Within 1 km of the south-western and western Base boundary, the groundwater dataset shows generally stable concentrations in sum of PFHxS and PFOS concentrations as indicated by the selected locations sampled. One of the bores (MW122), showed an increasing concentration in the period 2014 to 2020, however, between April 2020 and April 2021 concentrations were stable. This bore is located within 250 m of the western Base boundary and downgradient of the on-Base source areas. Refer to **Chart C4** in **Appendix C**.

8.4.5 Off-Base: South West of AACO 1 to 2 km of the South Western Corner of AACO

Groundwater in selected bores within 1 to 2 km of the south-western Base boundary generally show stable concentrations in sum of PFHxS and PFOS concentrations. The previous AIR (AECOM, 2021d) reported that samples from MW262 and MW134 showed a slight increase in concentrations in the period 2018 to 2019, however, between April 2020 and April 2021 concentrations in these monitoring wells have been stable. The fluctuations in PFAS concentration at this location may be related to seasonal effects or may indicate the concentrations have stabilised. Refer to **Chart C5** in **Appendix C**.

Groundwater in MW038 has shown variable concentrations with periods of increasing and decreasing concentrations. For example, there was an increasing concentration in sum of PFHxS and PFOS between October 2014 and October 2017, which was been followed by a decreasing concentration between October 2017 and October 2019. All other bores monitored in this area in April 2021 had similar PFAS concentrations compared to previously recorded maximum concentrations in these bores. The maximum sum of PFHxS and PFOS concentrations in groundwater in the April 2021 sampling event was 0.72 µg/L at MW038.

8.4.6 Brymaroo

Sum of PFHxS and PFOS concentrations in groundwater in the monitoring wells during the monitoring events are shown graphically in **Chart C6** in **Appendix C**. The data indicate concentrations are stable in most of the monitoring wells. An increasing concentration was evident at MW010, located immediately north of the infrastructure area with sum of PFHxS and PFOS concentrations increasing from <0.01 µg/L in April 2019 to 1.18 µg/L in April 2020, however, this has since decreased, with a concentration of 0.84 µg/L detected in April 2021.

8.5 Surface Water and Sediment Results

Surface water and sediment results for sum of PFHxS and PFOS in March/April 2021 are provided in **Figure 15** and **Figure 16**, respectively, in **Appendix A**.

8.5.1 Surface Water: Drainage Channels

The highest sum of PFHxS and PFOS concentration in surface water samples from the drainage channels in March/April 2021 was reported in the on-Base sample from drainage channel 2 (SW024 with 3.2 µg/L). PFAS concentrations decreased downstream of the Base:

- At drainage channel 1, sum of PFHxS and PFOS was 1.3 µg/L on-Base (SW066) and 1.1 µg/L off-Base (SW026).
- At drainage channel 2, sum of PFHxS and PFOS was 3.2 µg/L on-Base (SW024) and 0.5 µg/L off-Base (SW027).
- At drainage channel 3, sum of PFHxS and PFOS was 0.4 µg/L on-Base (SW063) and 0.02 µg/L off-Base (SW056).

8.5.2 Surface Water: Creeks

The highest PFOS concentrations in surface water samples from creeks in April 2021 was 0.57 µg/L at SW012, which is located approximately 1.5 km downstream of the outfall of drainage channels 1 and 2. The highest PFOS concentrations recorded along the Oakey Creek since 2017 was 0.72 µg/L at SW013 in April 2018.

The results indicate the following:

- **Oakey Creek:**
  - Upstream of the outflow of drainage channel 4: PFAS have not been detected above the limit of reporting at SW040. This location is considered representative of natural background conditions in the creek.
  - At outflow of drainage channel 4: PFOS was not detected above the limit of reporting at SW032 in April 2021. Trace level analysis in 2019 at SW032 indicated PFAS were present at very low concentrations (i.e. below the standard limits of reporting).
  - Downstream of drainage channels 1 and 2: All four surface water samples collected reported PFAS, with the sample collected from Oakey Creek 1.5 km downstream (SW012) of the outflow of drains 1 and 2 recording the highest concentration.
  - Downstream of confluence of Westbrook Creek: PFAS were not detected above the limit of reporting in the single surface water sample analysed (SW004).
- **Doctor Creek:** PFOS was detected at the limit of reporting (0.01 µg/L) in the single surface water sample collected from Doctor Creek (SW043) in April 2021. Trace level analysis in 2019 detected other PFAS (PFHxS, PFOA) at very low concentrations (i.e. below standard limits of reporting). The results indicate that there may be a pathway (e.g. via overland flow or groundwater) from on-Base sources of PFAS contamination to Doctor Creek but further sampling rounds are required to confirm this.
- **Westbrook Creek:** PFAS were not detected above the limit of reporting in the single surface water sample collected (SW028).

Overall, the results show the highest PFAS concentrations in surface water are present at monitoring locations within 1.5 to 3 kilometres downstream of the outflow point of drains 1 and 2. The concentrations decrease with increasing distance downstream from AACO. The furthest downstream sample collected (SW004), approximately 6.5 km downstream from AACO has consistently reported PFOS concentrations marginally above (0.01-0.02 µg/L) or below the limit of reporting (as was the case in April 2021).

8.5.3 Sediment

The highest PFOS concentration reported for sediment samples was 0.152 mg/kg at SD106 along drainage channel 1, which is higher than the previous maximum concentration recorded along this drainage channel (0.028 mg/kg). A summary of PFOS results for the different surface water features for the period 2019 to 2021 compared to 2015-2018 period results is shown in **Table 16**. With the exception of drainage channel 1, lower maximum PFOS concentrations have been recorded in sediment in the drainage channels in the period 2019 to 2021, which is attributed to remediation works along the on-Base drainage channels completed in 2018, which included the removal of approximately 12,000 m^3 of sediment and soil.

Table 16 Summary of Sediment Results: 2015 to 2021

Location	2015 to 2018		2019 to 2021	
	No of samples	Range of PFOS (mg/kg)	No of samples	Range of PFOS (mg/kg)
Drainage Channel 1	10	0.032 to 0.13	9	0.007 to 0.152
Drainage Channel 2	11	0.001 to 0.492	12	0.0011 to 0.37
Drainage Channel 3	12	0.001 to 3.68	12	0.0004 to 0.0523
Oakey Creek	35	<0.0002 to 0.021	25	<0.0002 to 0.0746
Doctor Creek	21	<0.0002 to 0.0072	3	<0.0002 to 0.0004
Westbrook Creek	1	0.0007	3	0.0002 to 0.0004

8.6 Surface water - Temporal Trends

8.6.1 Drainage Channels

Chart C8 in **Appendix C** shows the change in PFOS concentration in surface water in the three drainage channels, including on-Base and off-Base sampling locations between 2014 and 2021. PFOS has been selected as this compound has consistently been analysed since 2014.

For drainage channel 1, results show PFOS concentrations in 2021 were all lower than historical results from the period 2015 to 2017.

For drainage channel 2, results show PFOS concentrations in 2021 were within the historical range.

For drainage channel 3, results show PFOS concentrations in 2021 were lower than historical concentrations.

Overall, PFAS results in 2021 in surface water from the on-Base drainage channels were lower than the historical maximum concentrations indicating generally stable concentrations. Decreases in concentrations since 2018 may reflect reduction in mass flux along the drainage channels following completion of remediation works along the on-Base drainage channels in 2018.

8.6.2 Creeks

Chart C9 in **Appendix C** shows the change in PFOS concentration in surface water in different parts of Oakey Creek between 2014 and 2021. PFOS has been selected as this compound has consistently been analysed since 2014 and the concentrations of PFOS have been higher compared to other PFAS. The sampling locations have been selected based on the historical data available and the suitability of sampling locations to represent the following areas:

- Upstream of drainage channel 4 outfall (SW040)
- Upstream of outflow point of drainage channels 1 and 2 and downstream of drainage channel 3 (SW014) (It is noted that no sample was collected from SW014 in 2018 or 2019)
- Downstream of outflow of drainage channels 1 and 2 (SW013)
- A location approximately 1.5 km downstream of outflow of drainage channels 1 and 2 (SW012)
- A location approximately 2 km downstream of outflow of drainage channels 1 and 2 (SW011)
- A location approximately 3 km downstream of outflow of drainage channels 1 and 2 (SW010)

- Westbrook Creek (SW028) and Doctor Creek (SW043).

Overall, the results have been variable during the monitoring period with periods of increasing and decreasing trends. There appears to be a variable trend in PFAS concentration in Oakey Creek at SW13. There was a large decrease in PFOS concentration in April 2019 compared to April 2018 results, however, 2020 and 2021 results are approximately similar to the PFOS concentrations reported between 2015 and 2018. The decrease in PFOS concentration in 2018 could potentially reflect remediation activity in 2018 (excavation of sediment in drainage channels) resulting in reduction of the mass of PFAS entering the creek.

9.0 Conceptual Site Model

9.1 AACO

The CSM was developed during the investigation stages (AECOM, 2017a, b) and summarises the linkages between the sources, exposure pathways and receptors.

The OMP monitoring over the last 12 months has provided additional data to further understand the changing conditions (concentration and shape) of the area of groundwater impacted by PFAS in the AACO Management Area.

No localised changes to the nature and extent of PFAS have been identified and the PFAS transport mechanisms and the general extent of the area of groundwater PFAS impacts (size and shape) are inferred to be consistent with the existing CSM presented in AECOM (2017a, b).

Overall, data presented in this report on the PFAS primary and secondary sources, pathways and receptors does not change the understanding of the CSM. Future monitoring will continue to contribute to an evaluation of any potential change to the CSM understanding.

9.2 Brymaroo

The findings of the groundwater sampling event conducted in April 2021 are not considered to change the risk profile for the Base and no changes are required to the existing CSM for Brymaroo.

10.0 Discussion

10.1 Risk Profile

The data collected during the OMP over the 12-month monitoring period suggest that the risk profile to human health within the AACO Management Area is unchanged, based on the following conclusions of the data assessment:

- The extent of PFAS in groundwater is generally similar to that presented in the 2017 ESA (AECOM, 2017a) and subsequent monitoring reports (AECOM, 2018b, 2019a, 2019b, 2021d).
- PFAS analytical results for individual wells are generally in accordance with historical ranges. In April 2021 there was one first-time detection of sum of PFHxS and PFOS (marginally above the limit of reporting) in groundwater in a monitoring well screened in the Walloon Coal Measures aquifer. There were no other first-time detections of sum of PFHxS and PFOS or PFOA in underlying aquifers in the AACO Management Area, or in sentinel wells outside the Management Area. There were no first-time exceedances of the groundwater human health guideline values. Occasional low-level detections of PFAS (close to the limit of reporting) have been reported in groundwater samples collected from the Walloons Coal Measures aquifer since monitoring wells were installed in 2017. The first-time detection of PFAS in MW291 is not considered to represent a change in the risk profile.
- PFAS concentrations in surface water locations at the AACO Management Area were generally similar to previous (historical) results. There were no first-time exceedances of guideline values during the monitoring period.
- No significant change was observed in PFAS concentration in off-Base sediment.

Based on the data, AECOM considers that the conclusions made in the 2017 HHRA (AECOM, 2017b) still apply.

10.2 Assessment of Current OMP

Following a review of data collected during the current monitoring period, there has been no significant change to the understanding of risks associated with PFAS in the AACO Management Area, spatial distribution of PFAS and the need for monitoring of additional media. Furthermore, there has been no feedback received as a result of community consultation nor changes in land use. Based on this, there are no triggers to the requirement of a review of the OMP.

The next revision of the OMP should include the recommended changes to the sampling locations due to the access restrictions, lost monitoring wells.

11.0 Conclusions

Groundwater, surface water and sediment sampling were completed as part of the OMP between October 2020 and April 2021.

Overall, the concentrations of PFAS in groundwater were generally similar to previous results, with the highest PFAS concentrations in March/April 2021 being detected at monitoring wells located down-hydraulic gradient of PFAS source areas identified during previous investigations.

The inferred area with PFAS in groundwater in the AACO Management Area is similar to that presented in the 2017 ESA (AECOM, 2017a) and concentrations of PFAS in surface water and sediment were consistent with historical results. The 2020 AIR identified two localised off-Base areas (MW113/MW122 and MW134/MW262) with increasing PFAS groundwater concentrations. Decreased sum of PFHxS and PFOS concentrations in groundwater were recorded at these locations during the monitoring period.

Concentrations of PFAS in surface water and sediment were consistent with historical results.

At Brymaroo, most PFAS groundwater concentrations in April 2021 were similar to concentrations reported in April 2020. Increases in PFAS concentrations at MW010 were reported in the 2020 AIR, however no new maximum concentrations were reported in April 2021. As there are no monitoring wells to the northeast beyond MW010, the extent of the area of PFAS groundwater contamination in this direction is not known. Due to the distance to the site boundary (>400 m), the limited extent of PFAS in groundwater in other directions (<200 m) and the low hydraulic gradient of the Main Range Volcanics aquifer, this data gap is considered to be of low importance. Ongoing monitoring will indicate the longer term trend in PFAS concentrations in groundwater at the location of MW010.

The CSMs for AACO and Brymaroo were reviewed and no changes were identified to sources, pathways or receptors.

Based on the data, no changes to the risk profile are recommended, nor triggers to the requirements of a review of the OMP.

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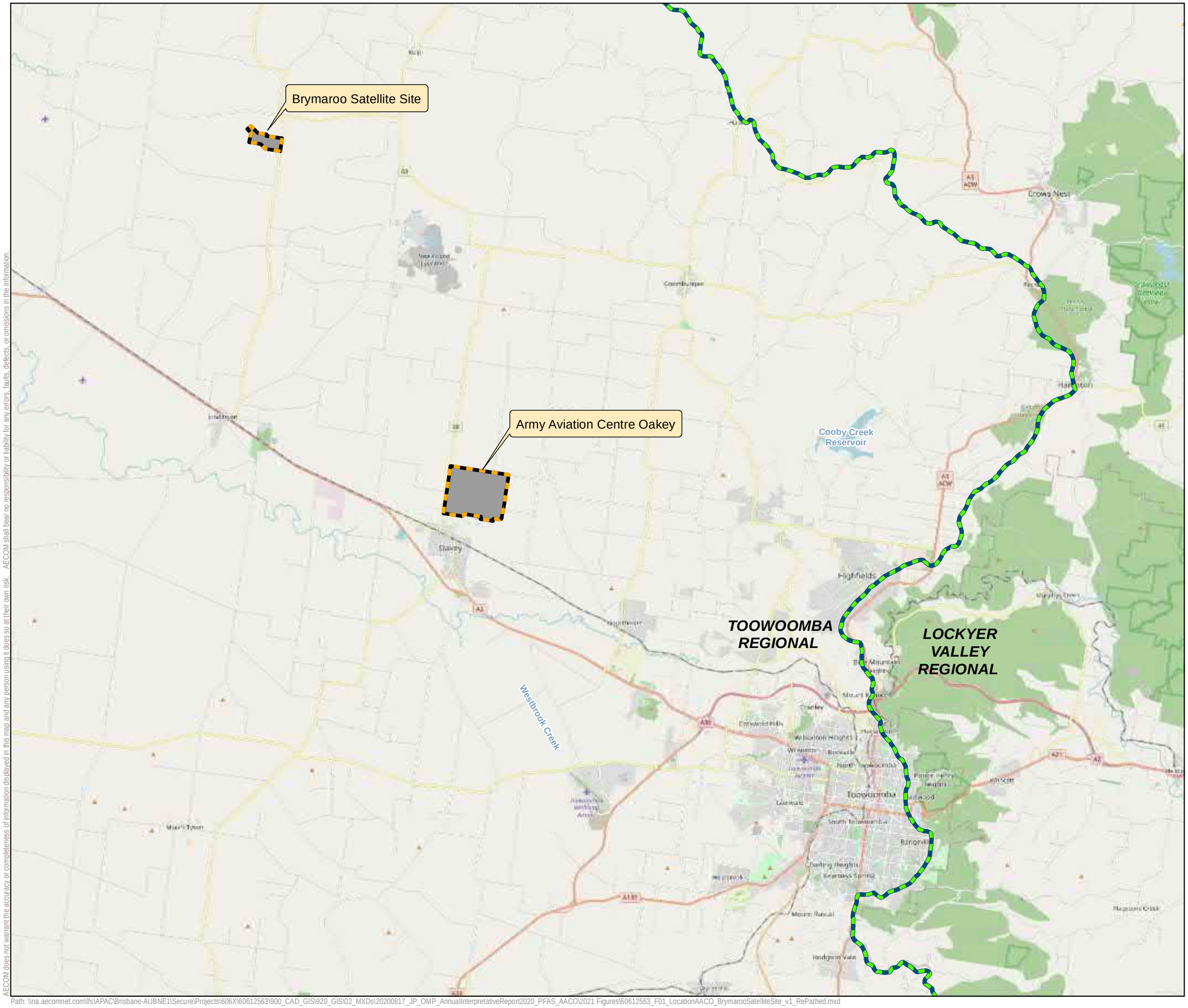

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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 1.5 3 6 Kilometers

1:200,000 (when printed at A3)

LEGEND

- Airport
- Watercourse/waterbody
- Great Dividing Range
- AACO and Brymaroo Boundaries
- Local Governmental Area
- National Park

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011

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OMP Annual Interpretative Report, 2021
PFAS OMP - AACO

LOCATION OF AACO AND BRYMAROO SATELLITE SITE

PROJECT ID	60612563
CREATED BY	JP
LAST MODIFIED	james.peachey; 13/08/2021
VERSION:	1

FIGURE 01

A3 size

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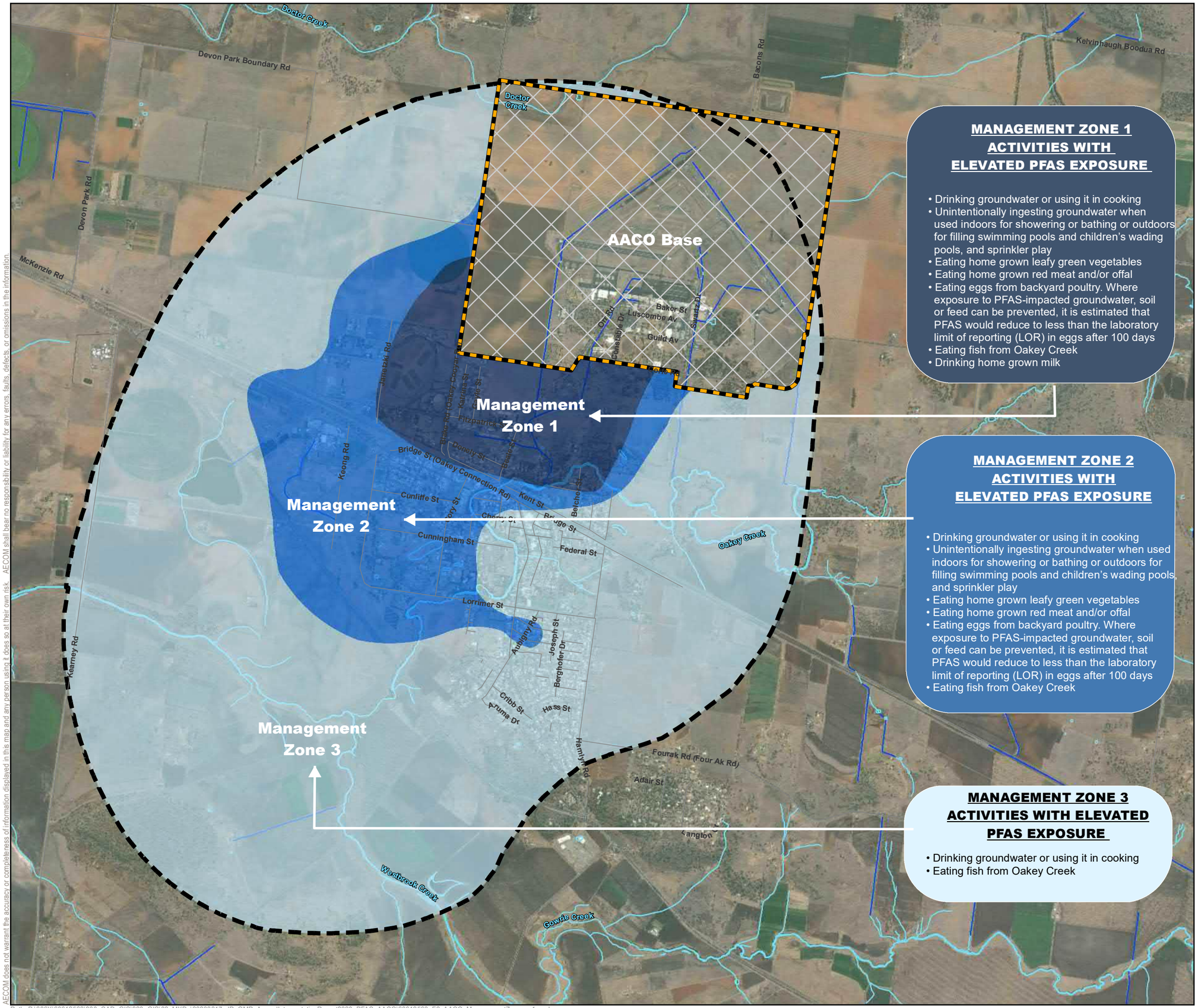

MANAGEMENT ZONE 1 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from backyard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek
- Drinking home grown milk

MANAGEMENT ZONE 2 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from backyard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek

MANAGEMENT ZONE 3 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Eating fish from Oakey Creek

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Path: P:\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\20200817_JP_OMP_AnnualInterpretativeReport2020_PFAS_AACO\60612563_F2_AACO_ManagementZones_v1.mxd

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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:35,000 (when printed at A3)

LEGEND

- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Area
- AACO Base

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011

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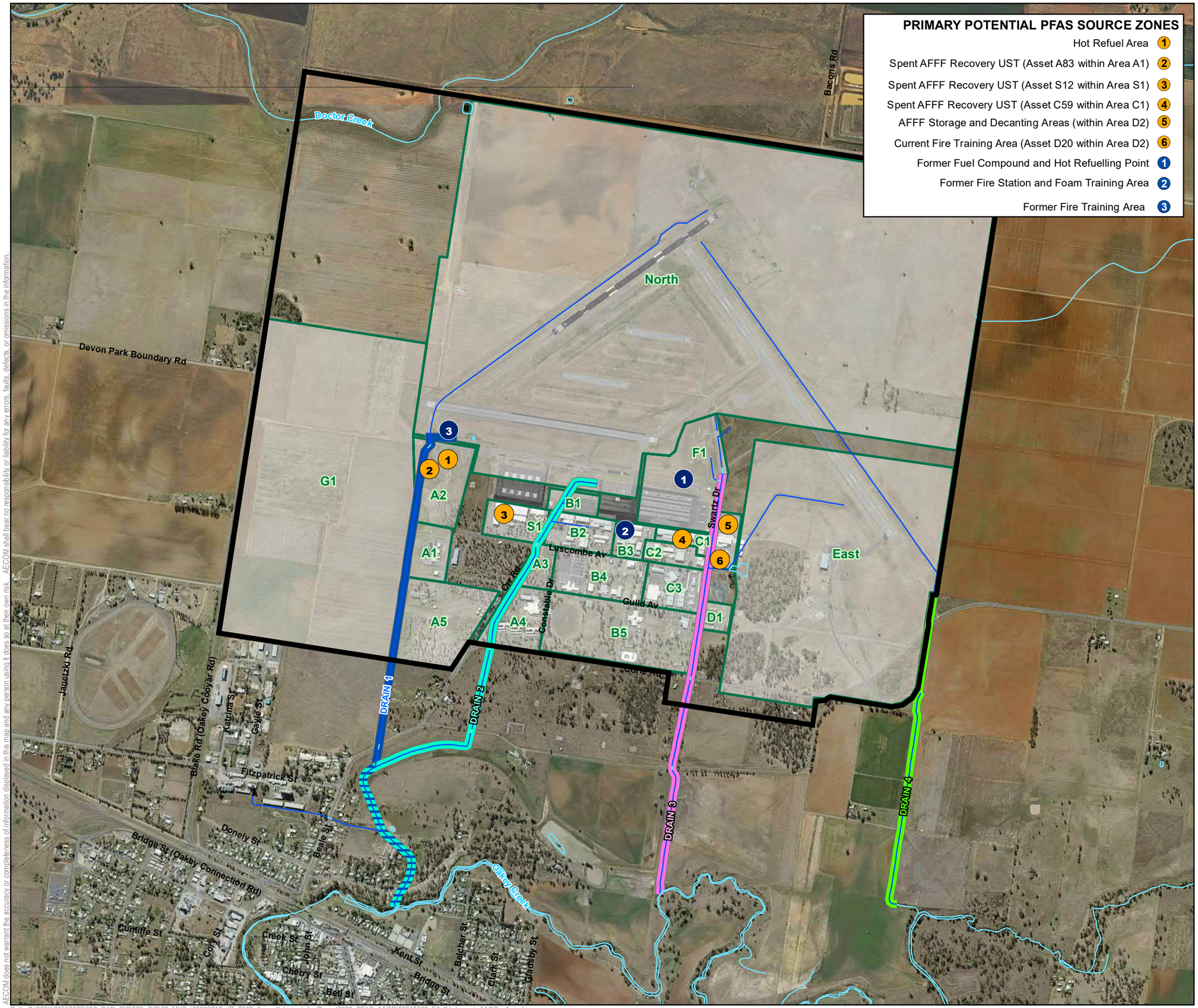
AACO MANAGEMENT AREA

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	bowenl2; 18/08/2020
VERSION:	1

FIGURE 02

A3 size



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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 100 200 400 600 m

1:17,000 (when printed at A3)

LEGEND

- 1 Active Primary Potential Sources of Contamination
- 1 Depleting Primary Potential Sources of Contamination
- Drainage channel
- Watercourse/water body
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- On-Site Investigation Areas
- Site Boundary

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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SITE LAYOUT – AACO

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	bowenl2; 18/08/2020
VERSION:	1

FIGURE 03

A3 size

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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 100 200 400 m

1:9,100 (when printed at A3)

LEGEND

- Site Boundary
- On-Site Groundwater Monitoring Locations

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
© State of Queensland, 2017

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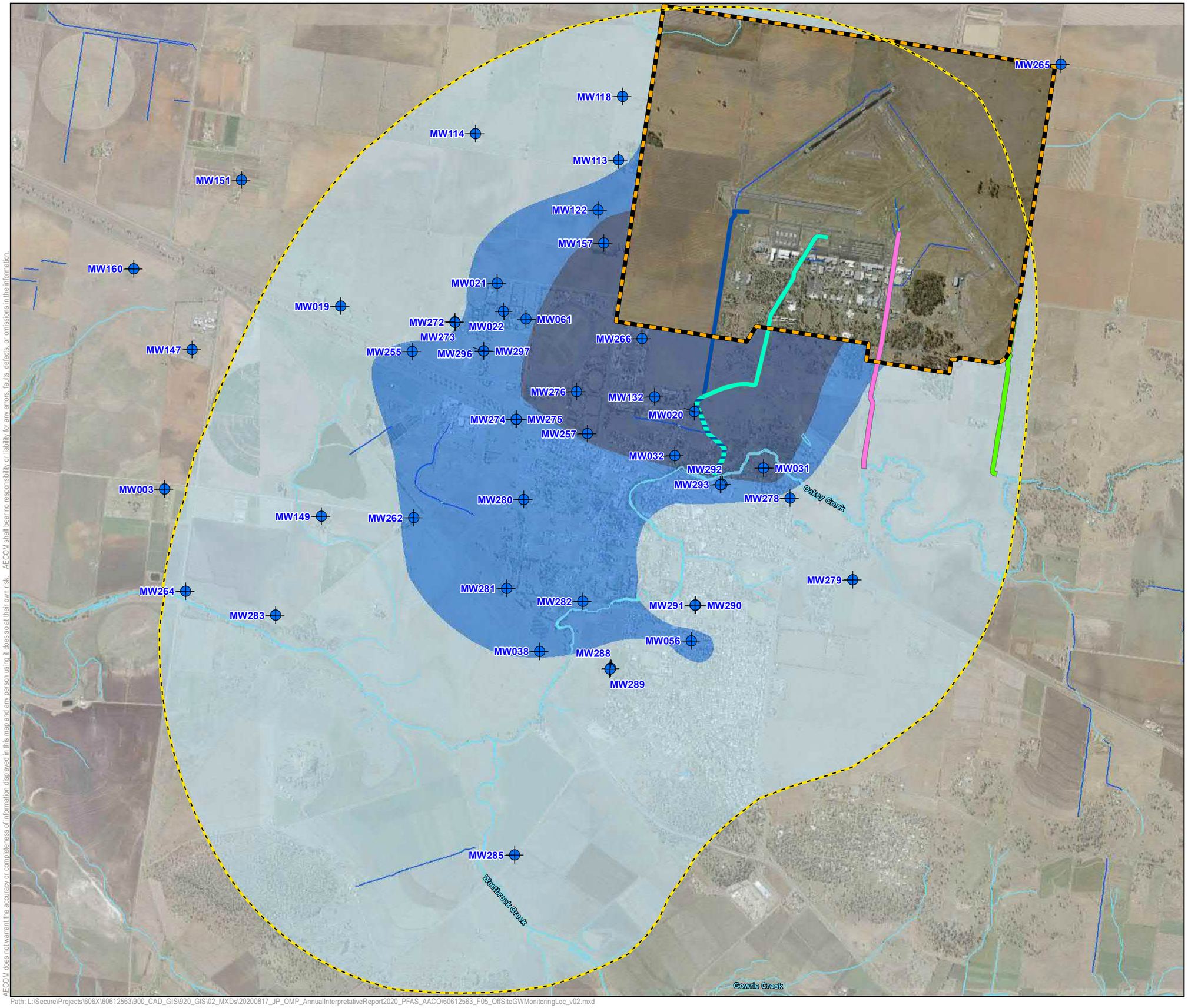
PFAS OMP - AACO

ON-SITE GROUNDWATER MONITORING LOCATIONS

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	james.peachey; 16/08/2021
VERSION:	1

FIGURE
04



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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:30,000 (when printed at A3)

LEGEND

- Off-Site Groundwater Monitoring Locations
- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
© State of Queensland, 2017

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OMP Annual Interpretative Report, 2021, PFAS OMP - AACO

OFF-SITE GROUNDWATER MONITORING LOCATIONS

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	joel.bryant; 09/02/2021
VERSION:	2

FIGURE 05

A3 size

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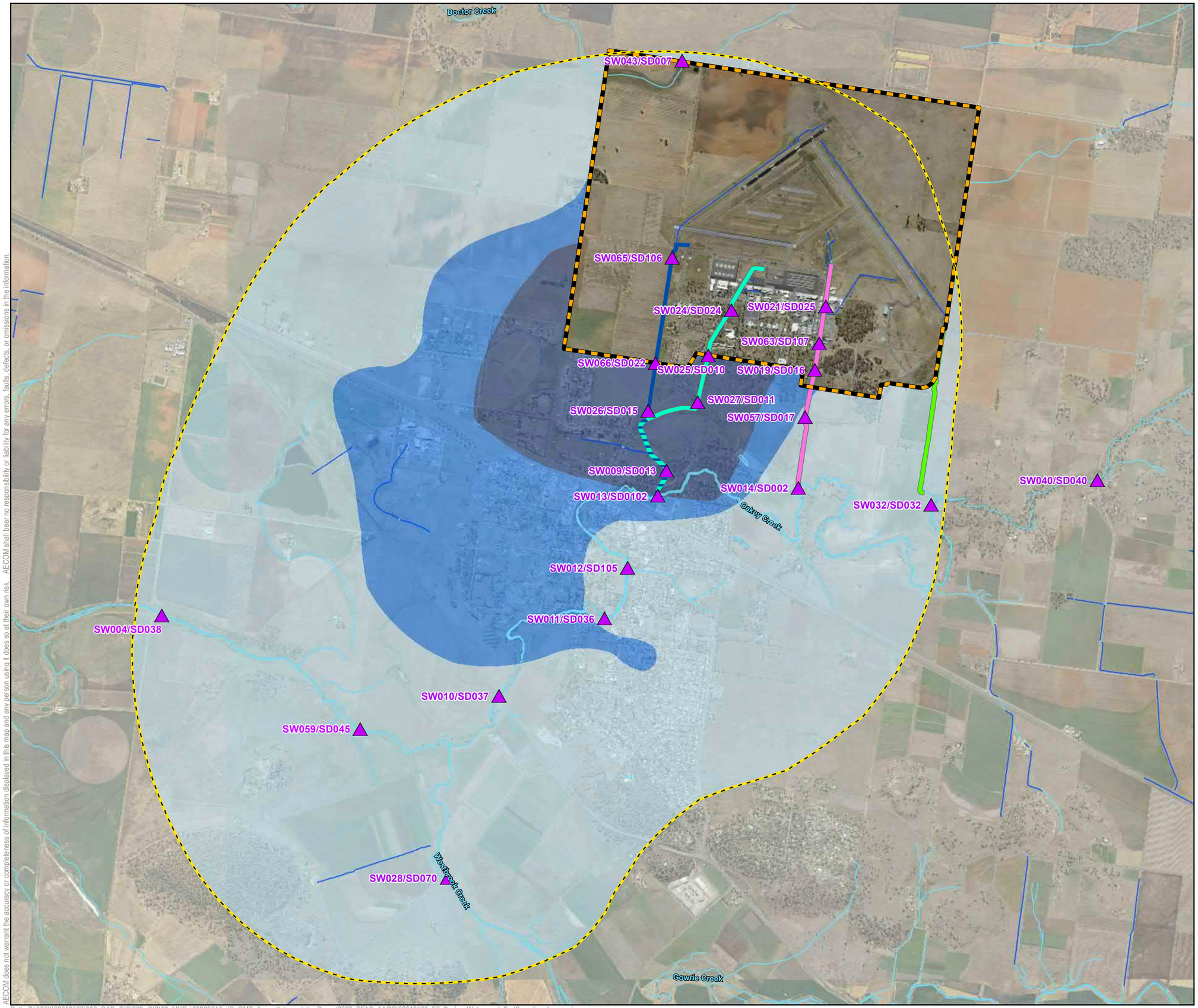

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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:32,000 (when printed at A3)

LEGEND

- Surface Water and Sediment Sampling Locations
- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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OMP Annual Interpretative Report, 2021, PFAS OMP - AACO

SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	bowenl2; 19/08/2020
VERSION:	1

FIGURE 06

A3 size

Path: P:\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\20200817_JP_OMP_AnnualInterpretativeReport2020_PFAS_AACO\60612563_F6_SurfaceWater_and_SedSampling_Loc.mxd

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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 10 20 40 60 Meters

1:1,800 (when printed at A3)

- Brymaroo Satellite Site
- Groundwater Monitoring Locations
- Monitoring Wells - lost

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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OMP Annual Interpretative Report, 2021,
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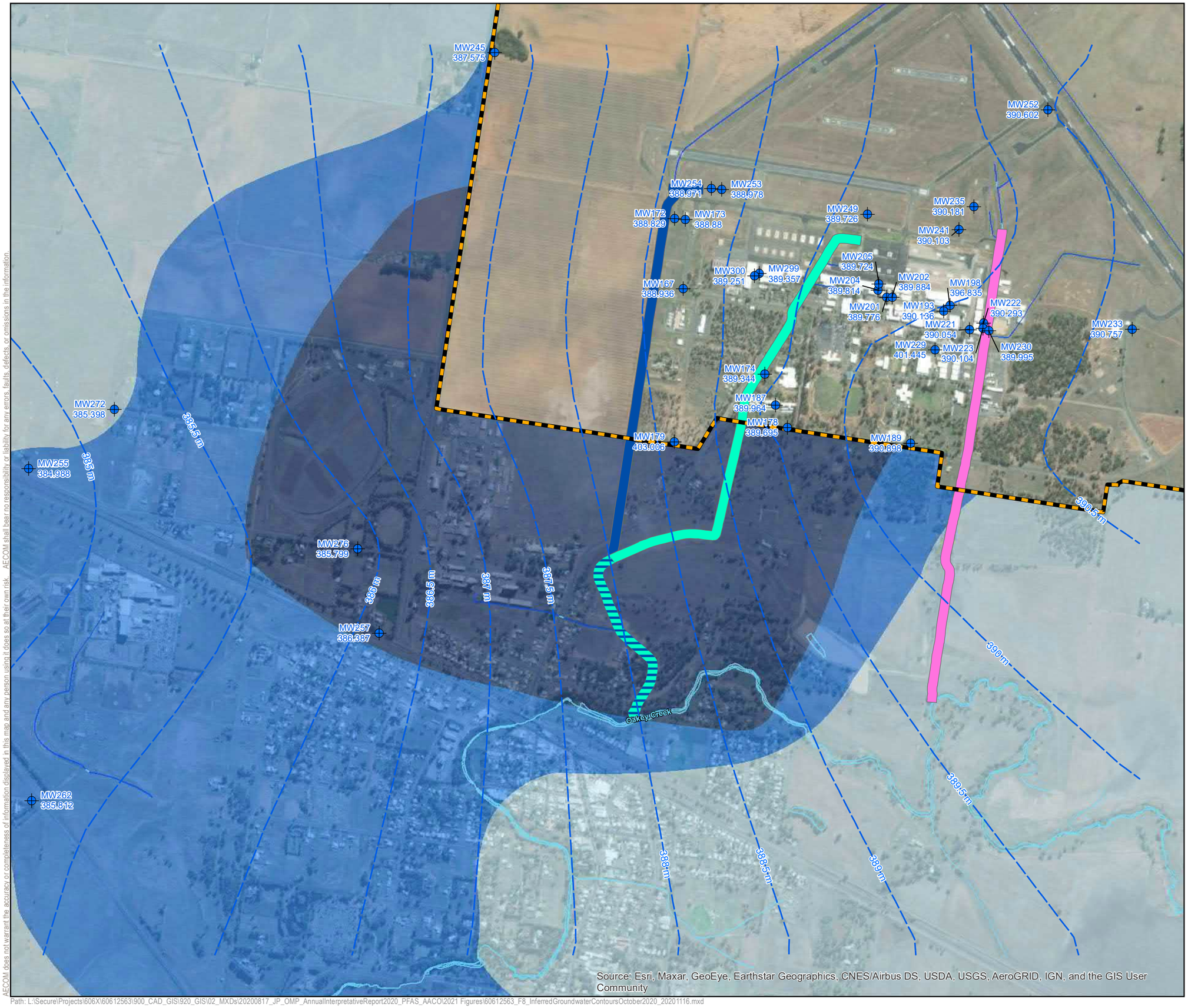
BRYMAROO GROUNDWATER MONITORING LOCATIONS

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	james.peachey; 16/08/2021
VERSION:	1

FIGURE 07

A3 size

Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\20200817_JP_OMP_AnnualInterpretativeReport2020_PFAS_AACO\2021 Figures\60612563_F07_Brymaroo GW locations_OakeyApr2021_v01.mxd



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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.125 0.25 0.5 km

1:15,000 (when printed at A3)

LEGEND

- Groundwater Well Location
- Groundwater Contour
- Drainage channel
- Watercourse/water body
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Area
- Site Boundary

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
© State of Queensland, 2017

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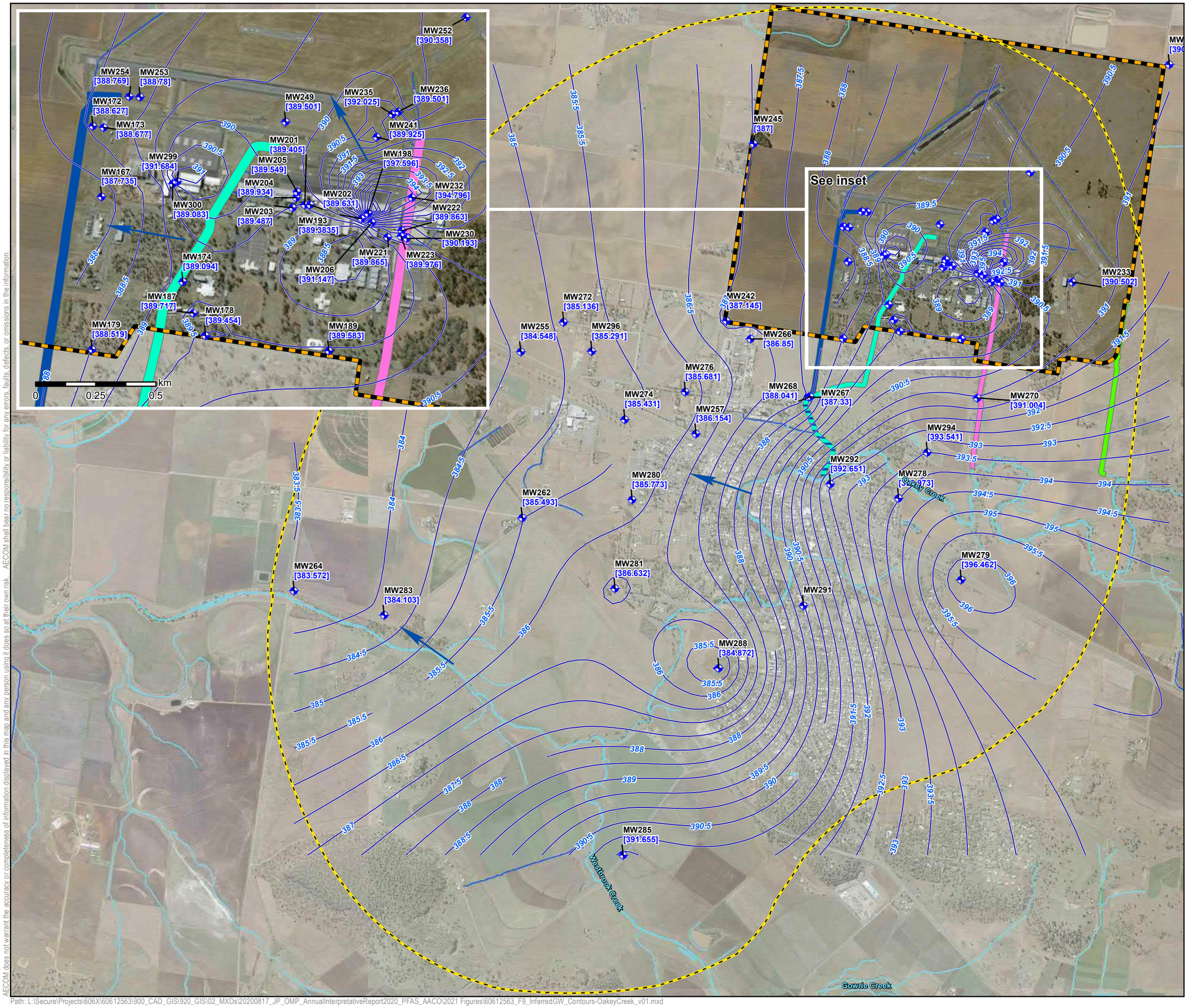
OMP Annual Interpretative Report, 2021, PFAS OMP - AACO

INFERRED GROUNDWATER CONTOURS IN THE OAKEY CREEK ALLUVIUM, OCTOBER 2020

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	stencela; 29/07/2021
VERSION:	1

FIGURE 08

Path: L:\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\20200817_JP_OMP_AnnualInterpretativeReport2020_PFAS_AACO\2021 Figures\60612563_F8_InferredGroundwaterContoursOctober2020_20201116.mxd



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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:30,000 (when printed at A3)

LEGEND

- Monitoring Wells
- Inferred Groundwater Contours
- Groundwater Flow
- Drainage channel
- Watercourse/water body
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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OMP Annual Interpretative Report, 2021, PFAS OMP - AACO

INFERRED GROUNDWATER CONTOURS IN THE OAKEY CREEK ALLUVIUM APRIL 2021

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	stencela; 29/07/2021
VERSION:	1

FIGURE 09

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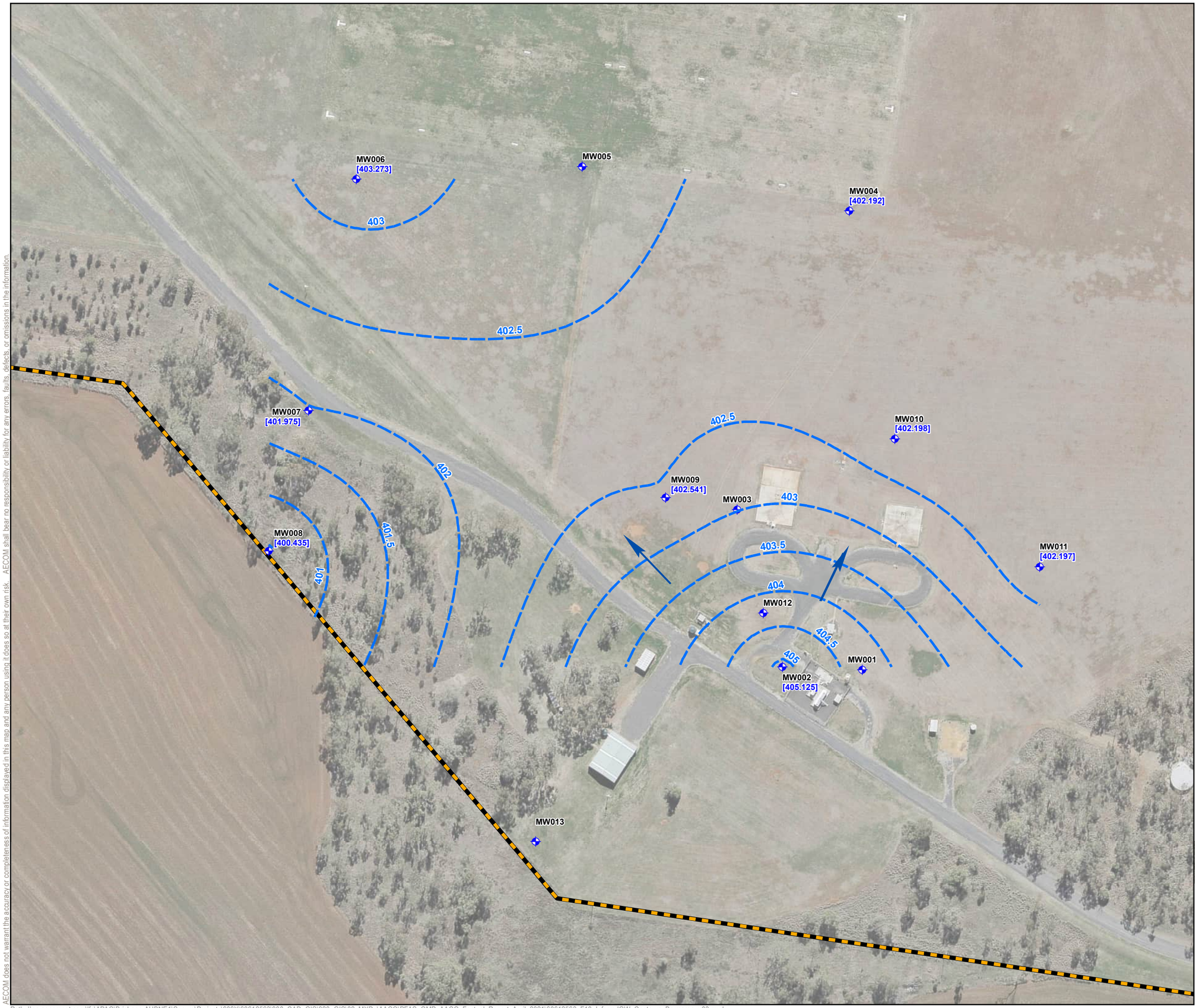

LEGEND

- Monitoring Wells (Groundwater Elevation in mAHD))
- Groundwater Contours (mAHD)
- Inferred Groundwater Flow
- Brymaroo Satellite Site Boundary

N

0 10 20 40 m

AECOM

SCALE 1:2,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 10: Inferred Groundwater Contours in the Main Range Volcanics at Brymaroo: April 2021

PROJECT

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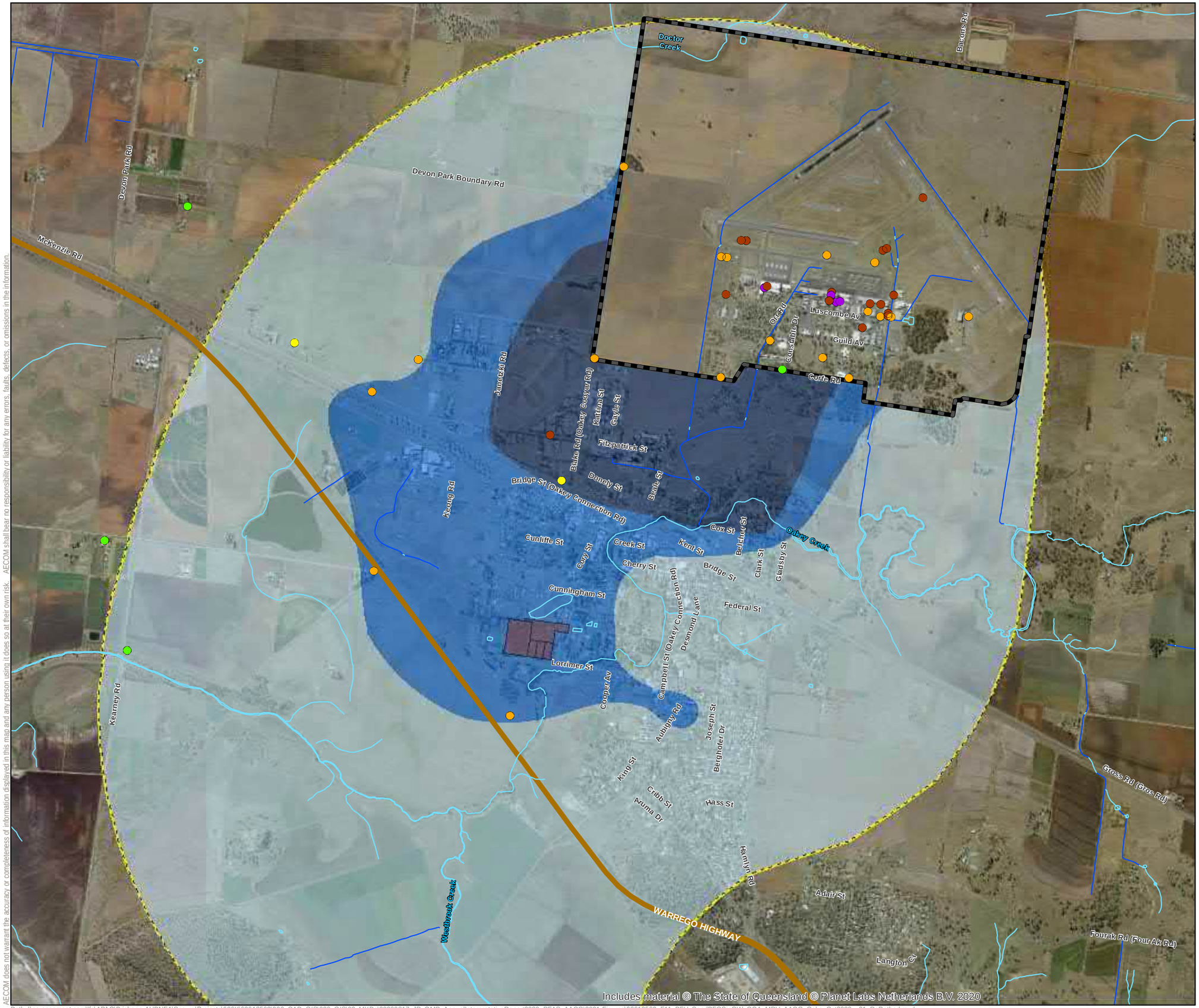

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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:28,000 (when printed at A3)

LEGEND

Groundwater Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR

- Drainage channel
- Watercourse/water body
- Former Landfill
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Area
- Site Boundary

Notes

1. <LOR - Less than laboratory limit of reporting
2. Maximum concentration of primary and QC samples shown for locations where duplicates and triplicates collected.
3. Monitoring wells and residential bores have only been included here if the landholder gave permission. As a result, not all monitoring wells and residential bores are depicted on the figure.

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
© State of Queensland, 2017

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OMP Annual Interpretative Report, 2021,
PFAS OMP - AACO

SUM OF PFHXS AND PFOS CONCENTRATIONS IN GROUNDWATER IN OAKEY CREEK ALLUVIUM AND MAIN RANGE VOLCANICS AT AACO IN OCTOBER 2020

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	james.peachey; 6/10/2021
VERSION:	2

FIGURE 11

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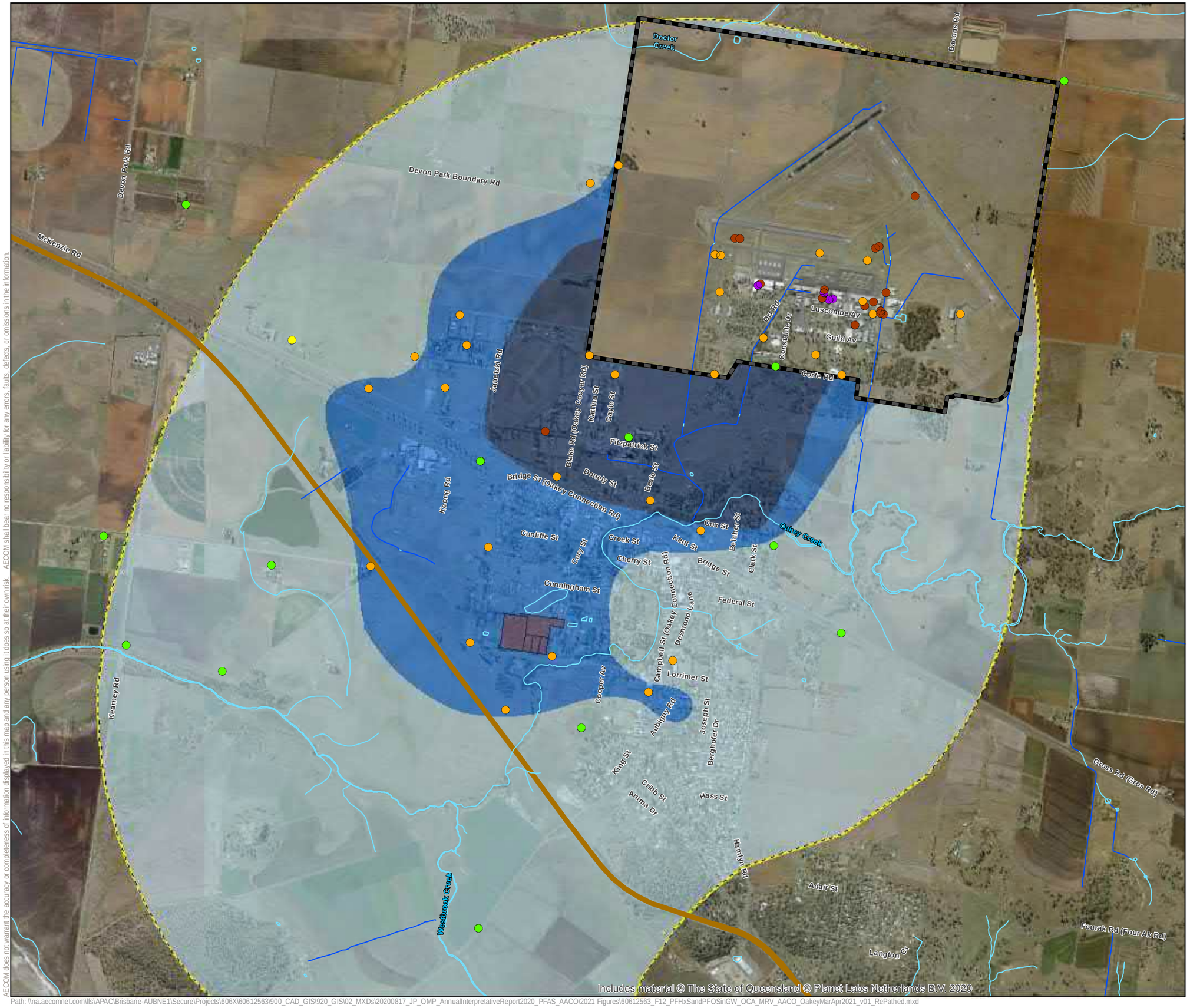
Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\20200817_JP_OMP_AnnualInterpretativeReport2020_PFAS_AACO\2021 Figures\60612563_F11_PFHxSandPFOSinGW_OCA_MRV_AACO_OakeyOct2020_v01_RePathed.mxd



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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:28,000 (when printed at A3)

LEGEND

Groundwater Analytical Results: PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- Drainage channel
- Watercourse/water body
- Former Landfill
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Area
- Site Boundary

Notes

1. <LOR - Less than laboratory limit of reporting
2. Maximum concentration of primary and QC samples shown for locations where duplicates and triplicates collected.
3. Monitoring wells and residential bores have only been included here if the landholder gave permission. As a result, not all monitoring wells and residential bores are depicted on the figure.

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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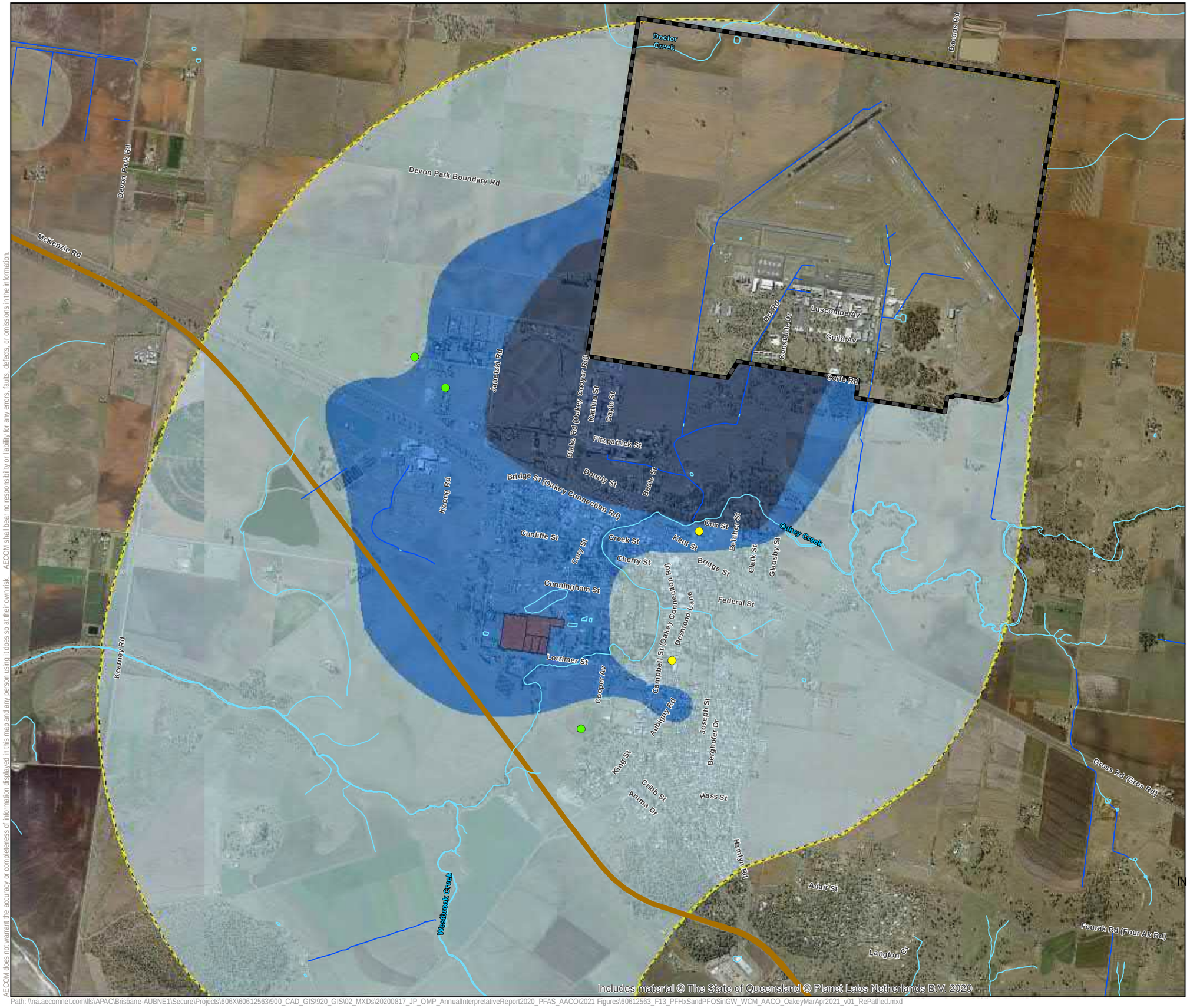
OMP Annual Interpretative Report, 2021,
PFAS OMP - AACO

SUM OF PFHXS AND PFOS CONCENTRATIONS IN GROUNDWATER IN OAKEY CREEK ALLUVIUM AND MAIN RANGE VOLCANICS AT AACO IN MARCH/APRIL 2021

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	james.peachey; 6/10/2021
VERSION:	2

FIGURE 12

Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\20200817_JP_OMP_AnnualInterpretativeReport2020_PFAS_AACO\2021 Figures\60612563_F12_PFHxSandPFOSinGW_OCA_MRV_AACO_OakeyMarApr2021_v01_RePathed.mxd



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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:28,000 (when printed at A3)

LEGEND

Groundwater Analytical Results: PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR

Drainage channel
Watercourse/water body
Former Landfill
Management Zone 1
Management Zone 2
Management Zone 3
Management Area
Site Boundary

Notes

1. <LOR - Less than laboratory limit of reporting
2. Maximum concentration of primary and QC samples shown for locations where duplicates and triplicates collected.
3. Monitoring wells and residential bores have only been included here if the landholder gave permission. As a result, not all monitoring wells and residential bores are depicted on the figure.

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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OMP Annual Interpretative Report, 2021,
PFAS OMP - AACO

SUM OF PFHXS AND PFOS CONCENTRATIONS IN GROUNDWATER IN WALLOON COAL MEASURES AT AACO IN MARCH/APRIL 2021

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	james.peachey; 6/10/2021
VERSION:	2

FIGURE 13

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DATUM GDA 1994. PROJECTION MGA ZONE 56

N

0 10 20 40 60 Meters

1:1,800 (when printed at A3)

LEGEND
Groundwater Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- Site Boundary

Note:
- Fire hydrant A14 and Tap 01 are connected to RN83413/ Bore 1 / admin bore
- Tank TW01 has been filled with water from RN83413/ Bore 1 / admin bore
- Hydrant A17 is connected to RN94423/ Bore 2/ Irrigation bore

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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OMP Annual Interpretative Report, 2021, PFAS OMP - AACO

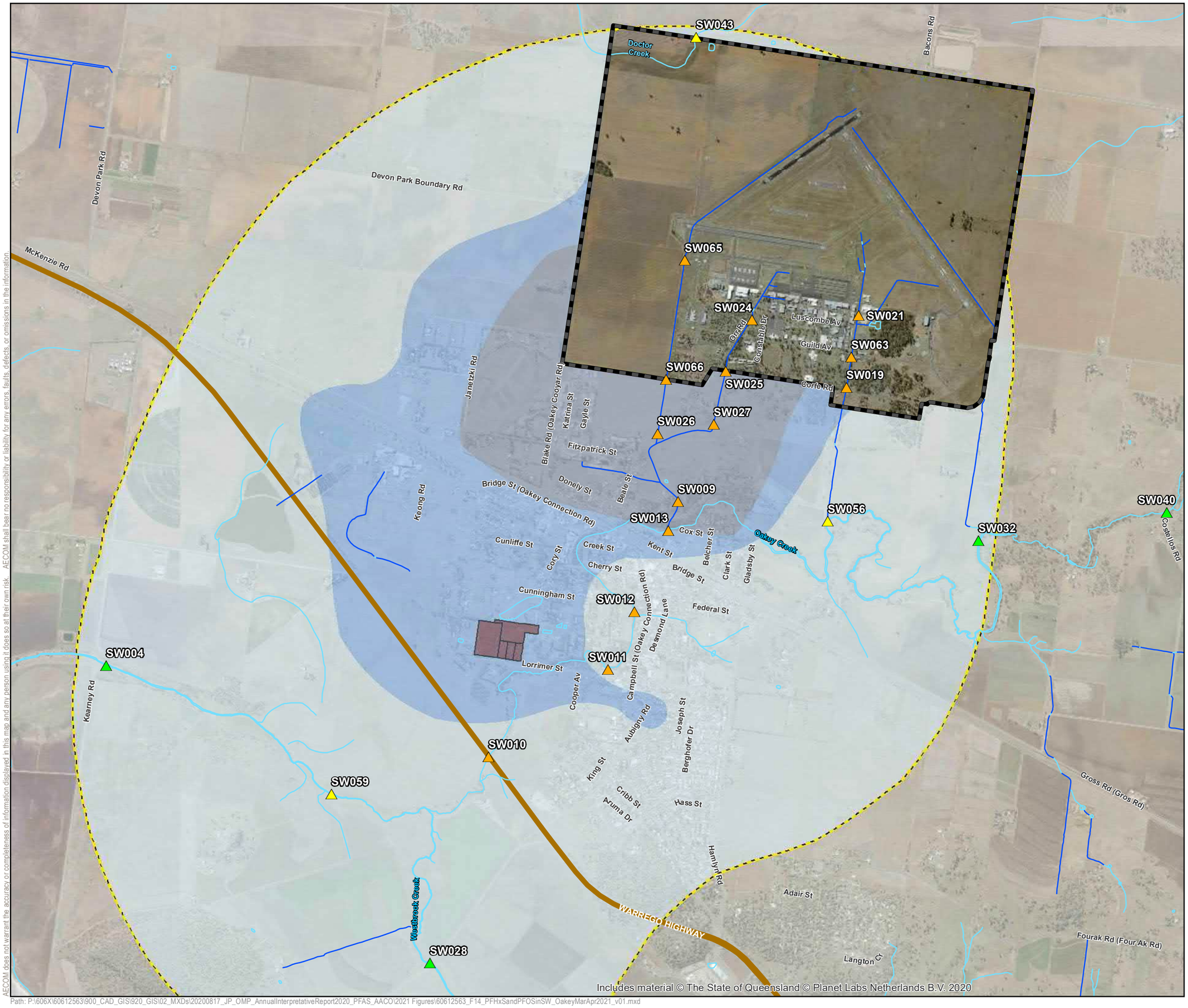
SUM OF PFHxS AND PFOS CONCENTRATIONS IN GROUNDWATER IN MAIN RANGE VOLCANICS AT BRYMAROO IN APRIL 2021

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	stencela; 22/07/2021
VERSION:	1

FIGURE 14

A3 size

Path: P:\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\20200817_JP_OMP_AnnualInterpretativeReport2020_PFAS_AACO\2021 Figures\60612563_F16_PFHxS&PFOSinGW_MRV_Brymaroo_OakeyApr2021_v01.mxd



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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:28,000 (when printed at A3)

LEGEND

Surface Water Analytical Results: PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- Drainage channel
- Watercourse/water body
- Former Landfill
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Area
- Site Boundary

Notes

1. <LOR - Less than laboratory limit of reporting

Data sources:

Base Layers: ESRI Basemaps Online
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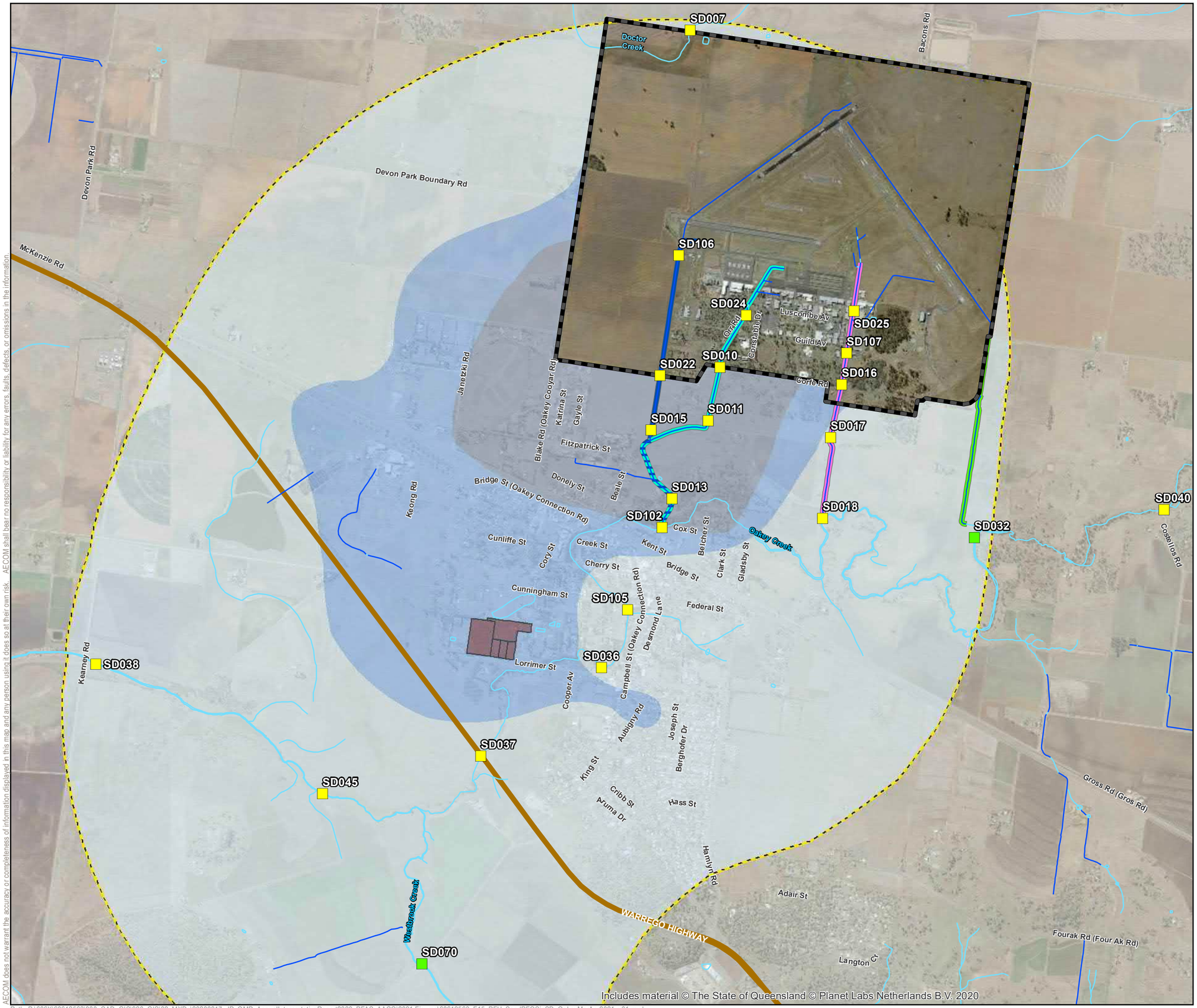
SUM OF PFHxS AND PFOS CONCENTRATIONS IN SURFACE WATER IN MARCH/APRIL 2021

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	stencela; 22/07/2021
VERSION:	1

FIGURE 15



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0 0.25 0.5 1 km

1:28,000 (when printed at A3)

LEGEND

Sediment Sample Analytical Results: PFHxS & PFOS Concentrations (mg/kg)

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

- Drainage channel
- Watercourse/water body
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Former Landfill
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Area
- Site Boundary

Notes

1. <LOR - Less than laboratory limit of reporting
2. Maximum concentration of primary and QC samples shown for locations where duplicates and triplicates collected.
3. Sampling locations only been included here if the landholder gave permission. As a result, not all sampling locations are depicted on the figure.

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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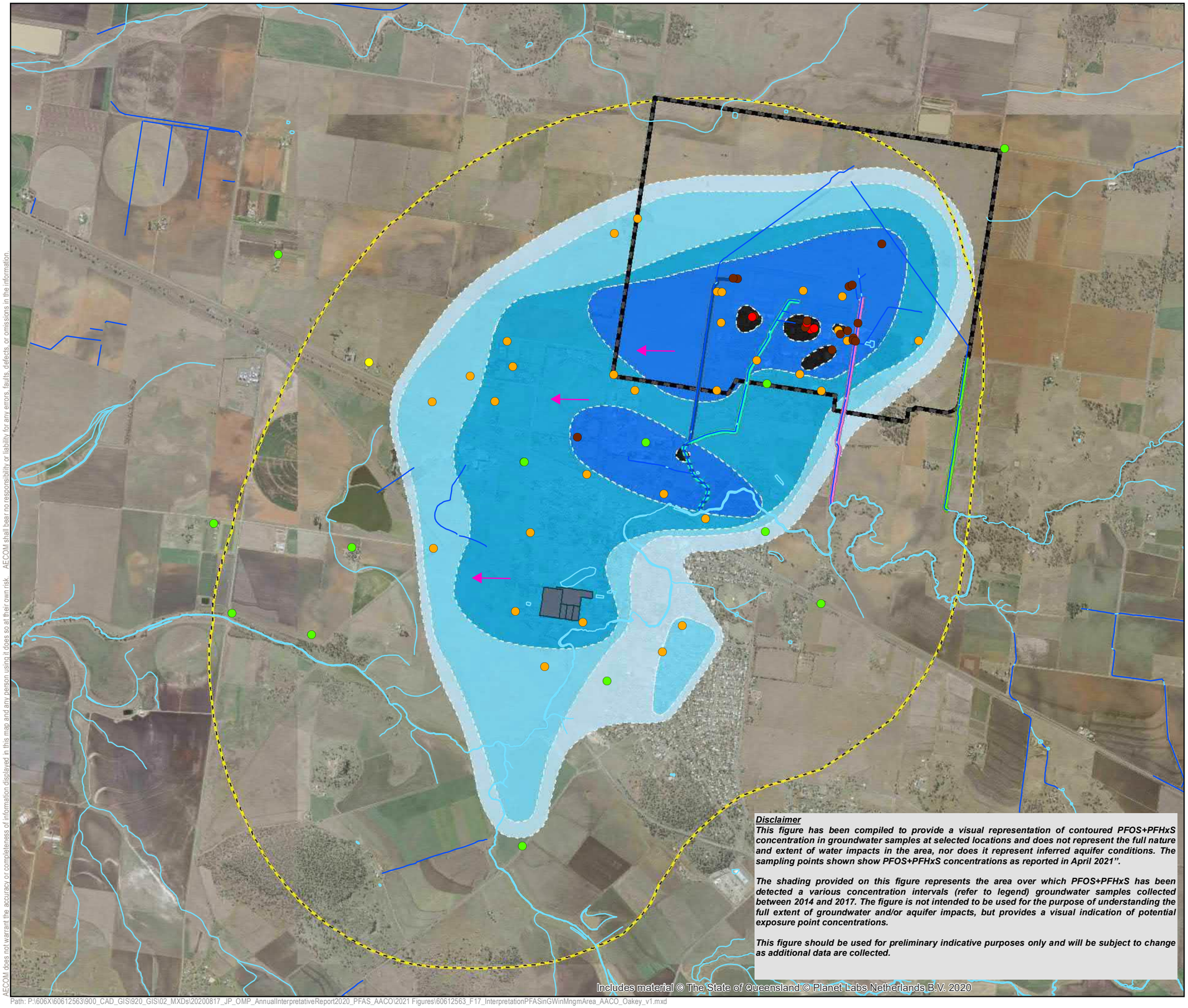
SUM OF PFHxS AND PFOS CONCENTRATIONS IN SEDIMENT IN MARCH/APRIL 2021

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	stencela; 22/07/2021
VERSION:	1

FIGURE 16

Path: P:\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\20200817_JP_OMP_AnnualInterpretativeReport2020_PFAS_AACO\2021 Figures\60612563_F15_PFHxSandPFOSinSD_OakeyMarApr2021_v01.mxd



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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:34,000 (when printed at A3)

LEGEND

Groundwater Analytical Results: PFOS + PFHxS Concentrations (µg/L) (April 2021)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR

Interpreted PFOS+PFHxS in groundwater Concentration Ranges (µg/L) based on 2014 to 2017 data

- >50
- >10 - 50
- >1 - 10
- >0.07 - 1
- >LOR-0.07
- Interpreted groundwater flow direction
- Drainage channel
- Watercourse/water body
- Former Landfill
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

Notes

1. <LOR - Less than laboratory limit of reporting
2. Maximum concentration of primary and QC samples shown for locations where duplicates and triplicates collected.
3. Sampling locations only been included here if the landholder gave permission. As a result, not all sampling locations are depicted on the figure.

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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OMP Annual Interpretative Report, 2021, PFAS OMP - AACO

ESTIMATED EXTENT OF SUM OF PFHxS AND PFOS IN GROUNDWATER IN THE MANAGEMENT AREA

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	stencela; 22/07/2021
VERSION:	1

FIGURE 17

Disclaimer

This figure has been compiled to provide a visual representation of contoured PFOS+PFHxS concentration in groundwater samples at selected locations and does not represent the full nature and extent of water impacts in the area, nor does it represent inferred aquifer conditions. The sampling points shown show PFOS+PFHxS concentrations as reported in April 2021".

The shading provided on this figure represents the area over which PFOS+PFHxS has been detected a various concentration intervals (refer to legend) groundwater samples collected between 2014 and 2017. The figure is not intended to be used for the purpose of understanding the full extent of groundwater and/or aquifer impacts, but provides a visual indication of potential exposure point concentrations.

This figure should be used for preliminary indicative purposes only and will be subject to change as additional data are collected.

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Appendix B

Tables

Appendix B Tables

Table T1 Groundwater Gauging and Quality Parameter Field Measurement Results
Table T2 Historical PFAS Analytical Results – Groundwater
Table T3 Historical PFAS Analytical Results at Brymaroo Satellite Site – Groundwater
Table T4 Historical Non-PFAS Analytical Results – Groundwater
Table T5 Surface Water Quality Parameter and Field Measurement Results
Table T6 Historical PFAS Analytical Results – Surface Water
Table T7 Historical PFAS Analytical Results – Sediment

Property ID	Well ID	Date Hydrasleeve Installed	Date Hydrasleeve Sampled	Gauging Date	Well Depth (mbtoc)	Depth to LNAPL (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Corrected Groundwater Elevation (mAHD)*	Condition of Gatic	DO (mg/L) *Field measurement*	EC (µS/cm) *Field measurement*	pH *Field measurement*	E_r (mV) *Field measurement*	E_h (mV)	Temp (°C) *Field measurement*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0207	MW003	None- tap	None- tap	21/10/2020	-	-	-	-	-	-	-	2.06	1500	7.59	90.9	295.9	17	Clear	Clear	No odour	No sheen	Tap
0207	MW003	None-tap	None-tap	13/04/2021	-	-	-	-	-	-	-	1.51	1912	7.58	124.2	329.2	18.1	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW019	None- tap	None- tap	21/10/2020	-	-	-	-	-	-	-	3.36	1753	7.43	172	377	18.4	Clear	Clear	No odour	No sheen	Tap
0207	MW019	None-tap	None-tap	13/04/2021	-	-	-	-	-	-	-	3.51	2348	7.26	108.2	313.2	21.9	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW020	None-tap	None-tap	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N/A - stakeholder uncontactable
0207	MW021	None-tap	None-tap	19/04/2021	-	-	-	-	-	-	-	3.03	3764	7.77	104.1	309.1	21	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW022	None- tap	None- tap	22/11/2020	-	-	-	-	-	-	-	2.39	1527	-	101.7	306.7	23.1	Clear	Clear	No odour	No sheen	Tap
0207	MW022	None-tap	None-tap	-	-	-	-	-	-	-	-	3.42	1760	6.98	40	245	18.7	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW031	None-tap	None-tap	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N/A - stakeholder uncontactable
0207	MW032	None-tap	None-tap	19/04/2021	-	-	-	-	-	-	-	5.02	2631	8.54	144.7	349.7	24.5	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW038	None- tap	None- tap	21/10/2020	-	-	-	-	-	-	-	0.48	892	8.38	127.2	332.2	23.1	Clear	Clear	No odour	No sheen	Tap
0207	MW038	None-tap	None-tap	15/04/2021	-	-	-	-	-	-	-	0.44	1285	9.22	46.7	251.7	23.7	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW056	21/10/2020	23/10/2020	21/10/2020	20.15	-	11.009	-	-	-	Good	1.51	1690	-	200.9	405.9	21.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW056	23/10/2020	13/04/2021	13/04/2021								0.48	2287	6.68	-	-	21.1	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW113	None-tap	None-tap	15/04/2021	-	-	-	-	-	-	-	0.39	2264	7.33	-44.7	160.3	26.6	Low	Clear	No odour	No sheen	Tap Sample
0207	MW114	None-tap	None-tap	-	-	-	-	-	-	-	-	3.74	1716	6.76	-7.7	197.3	22.9	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW118	None-tap	None-tap	-	-	-	-	-	-	-	-	4.16	1743	6.96	-10.5	194.5	30	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW122	None-tap	None-tap	-	-	-	-	-	-	-	-	5.97	1796	6.77	-52.1	152.9	22.2	Turbid	Brown	No odour	No sheen	Tap Sample
0207	MW132	None-tap	None-tap	19/04/2021	-	-	-	-	-	-	-	5.29	2115	8.31	137.9	342.9	23.7	Low	Clear	No odour	No sheen	Tap Sample
0207	MW134	None- tap	None- tap	21/10/2020	-	-	-	-	-	-	-	5.09	1727	7.56	137	342	21.3	Clear	Clear	No odour	No sheen	Tap
0207	MW134	None-tap	None-tap	20/04/2021	-	-	-	-	-	-	-	4.51	4226	11.39	-212.8	-7.8	20.7	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW147	None- tap	None- tap	21/10/2020	-	-	-	-	-	-	-	1.67	3144	7.31	72	277	21.5	Clear	Clear	No odour	No sheen	Tap
0207	MW147	None-tap	None-tap	13/04/2021	-	-	-	-	-	-	-	1.62	4000	7.31	37.2	242.2	23.6	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW149	None-tap	None-tap	19/04/2021	-	-	-	-	-	-	-	2.14	4771	4.75	261.6	466.6	21.1	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW151	None- tap	None- tap	21/10/2020	-	-	-	-	-	-	-	4.68	1581	7.47	82.5	287.5	20.7	Clear	Clear	No odour	No sheen	Tap
0207	MW151	None-tap	None-tap	13/04/2021	-	-	-	-	-	-	-	3.49	1868	7.22	125.9	330.9	20	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW157	None-tap	None-tap	-	-	-	-	-	-	-	-	4.2	2194	6.83	22.3	227.3	22.5	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW160	None-tap	None-tap	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	N/A - stakeholder uncontactable
0207	MW167	None-bailed	None-bailed	19/10/2020	14.75	-	13.644	402.428	388.784	388.784	Good	3.55	1685	7.54	195.1	400.1	23.2	Turbid	Light Brown	No odour	No sheen	Grab sample with bailer due to insufficient column to deploy hydrasleeve.
0207	MW167	None-bailed	None-bailed	17/04/2021	15.34	-	14.693	402.428	387.735	387.735	Good	2.71	3610	7.61	97.8	302.8	22.7	Turbid	Light brown	No odour	No sheen	Grab sample collected with bailer due to insufficient water column.
0207	MW172	30/03/2020	20/10/2020	19/10/2020	17.2	-	14.179	402.818	388.639	388.639	Good	2.92	1222	7.41	392.2	597.2	19.7	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW172	20/10/2020	14/04/2021	14/04/2021	17.17	-	14.191	402.818	388.627	388.627	Good	2.37	1813	7.34	93.8	298.8	21.4	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW173	26/03/2020	20/10/2020	19/10/2020	17.99	-	14.564	403.262	388.698	388.698	Good	3.43	1474	7.45	362.3	567.3	20.7	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW173	20/10/2020	14/04/2021	14/04/2021	17.95	-	14.585	403.262	388.677	388.677	Good	3	2081	7.23	107.4	312.4	22	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW174	19/10/2020	20/10/2020	19/10/2020	29.96	-	14.845	404.072	389.227	389.227	Good	4.29	2712	7.45	57.3	262.3	21	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW174	20/10/2020	14/04/2021	14/04/2021	29.99	-	14.978	404.072	389.094	389.094	Good	1.11	2871	7.3	93.7	298.7	23	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW178	26/03/2020	19/10/2020	19/10/2020	17.4	-	13.961	403.513	389.552	389.552	Good	0.9	3166	7.14	-47.2	157.8	23.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW178	19/10/2020	17/04/2021	17/04/2021	17.4	-	14.059	403.513	389.454	389.454	Good	0.04	6431	7.44	90.9	295.9	22.6	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW179	19/10/2020	20/10/2020	19/10/2020	20.9	-	14.402	403.000	388.598	388.598	Good	0.61	3522	7.18	176	381	22.2	Clear	Clear		No sheen	Hydrasleeve
0207	MW179	20/10/2020	16/04/2021	16/04/2021	20.98	-	14.487	403.006	388.519	388.519	Good	0.74	5039	7.91	135.2	340.2	26	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW187	25/03/2020	20/10/2020	20/10/2020	18.3	-	14.727	404.576	389.849	389.849	Good	0.6	3114	7.26	135.8	340.8	21.6	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW187	20/10/2020	17/04/2021	17/04/2021	18.29	-	14.859	404.576	389.717	389.717	Good	0.31	6437	7.34	113.7	318.7	22.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW189	25/03/2020	20/10/2020	20/10/2020	21.04	-	14.937	405.431	390.494	390.494	Good	1.04	3501	7.35	131.1	336.1	21.8	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW189	20/10/2020	17/04/2021	17/04/2021	21.05	-	15.069	404.652	389.583	389.583	Good	0.93	7193	7.18	142.1	347.1	21.8	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW193	25/03/2020	20/10/2020	19/10/2020	19.72	-	15.617	405.676	390.059	390.059	Good	0.51	5114	7.1	-14.1	190.9	24	Clear	Clear	HC odour	Sheen	Hydrasleeve
0207	MW193	20/10/2020	14/04/2021	14/04/2021	19.74	15.707	17.782	405.630	387.848	389.384	Good	0.5	6918	7.25	27.8	232.8	22.9	Clear	Clear	HC odour	Oil globules / Sheen	Hydrasleeve
0207	MW198	25/03/2020	19/10/2020	19/10/2020	13.5	-	7.658	405.505	397.847	397.847	Good	0.9	2551	7.06	106.4	311.4	27.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW198	19/10/2020	14/04/2021	14/04/2021	13.48	-	7.909	405.505	397.596	397.596	Good	0.29	1381	7.18	145.8	350.8	23.9	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW201	26/03/2020	23/10/2020	22/10/2020	19.87	-	15.211	404.900	389.689	389.689	Good	0.79	2947	-	208.3	413.3	22	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW201	23/10/2020	15/04/2021	15/04/2021	19.935	-	15.395	404.800	389.405	389.405	Good	1.07	3443	6.78	212.4	417.4	20.1	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW202	30/03/2020	23/10/2020	22/10/2020	19.14	-	15.273	405.100	389.827	389.827	Good	1.57	2414	-	183.9	388.9	22.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW202	23/10/2020	17/04/2021	17/04/2021	19.13	-	15.369	405.000	389.631	389.631	Good	1.21	4737	7.42	115.8	320.8	23.3	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW203	25/03/2020	22/10/2020	21/10/2020	20.11	-	15.395	405.100	389.705	389.705	Good	1.45	2021	-	256.3	461.3	19.4	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW203	22/10/2020	15/04/2021	15/04/2021	20.102	-	15.613	405.100	389.487	389.487	Good	1.7	2433	6.98	181.5	386.5	23.1	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW204	25/03/2020	22/10/2020	22/10/2020	19.99	-	14.983	405.200	390.217	390.217	Good	2.64	3151	-	160.9	365.9	21.8	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW204	22/10/2020	17/04/2021	17/04/2021	19.99	-	15.266	405.200	389.934	389.934	Good	2.85	7258	7.17	117.3	322.3	22.5	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW205	26/03/2020	22/10/2020	22/10/2020	20.11	-	16.023	405.700	389.677	389.677	Good	1.91	1823	-	159.9	364.9	23.3	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW205	22/10/2020	17/04/2021	17/04/2021	20.1	-	16.151	405.700	389.549	389.549	Good	1.72	3738	7.3	105.2	310.2	23.5	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW206	26/03/2020	19/10/2020	19/10/2020	19.14	-	14.467	405.72	391.253	391.253	Good	3.28	3813	7.42	123.2	328.2	23.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW206	19/10/2020	14/04/2021	14/04/2021	19.14	-	14.573	405.720	391.147	391.147	Good	1.07	5168	7.33	146.1	351.1	24.2	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW221	25/03/2020	19/10/2020	19/10/2020	19.49	-	15.475	405.496	390.021	390.021	Good	1.94	1649	7.54	111.1	316.1	22.4	Turbid	Clear	No odour	No sheen	Hydrasleeve
0207	MW221	19/10/2020	14/04/2021	14/04/2021	19.39	-	15.631	405.496	389.865	389.865	Good	0.68	2272	7.57	134.4	339.4	23.2	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW222	25/03/2020	19/10/2020	19/10/2020	19.16	-	15.694	405.658	389.964	389.964	Good	3.89	1999	7.87	161	366	21.1	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW222	19/10/2020	14/04/2021	14/04/2021	19.11	-	15.853	405.716	389.863	389.863	Good	3.04	3110	7.31	128.9	333.9	25.1	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW223	25/03/2020	19/10/2020	19/10/2020	20.14	-	15.723	405.788	390.065	390.065	Good	4.77	1828	7.15	136.5	341.5	21.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW223	19/10/2020	14/04/2021	14/04/2021	20.18	-	15.869	405.845	389.976	389.976	Good	4.04	2700	7.14	128.4	333.4	24.9	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW229	25/03/2020	20/10/2020	20/10/2020	15.66	-	4.499	405.533	401.034	401.034	Good	0.68	1518	7.68	115.4	320.4	25.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW229	20/10/2020	14/04/2021	14/04/2021	15.66	-	3.936	405.533	401.597	401.597	Good	0.15	2127	7.62	95.3	300.3	26.7	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW230	25/03/2020	19/10/2020	19/10/2020	16.02	-	15.254	405.416	390.162	390.162	Good	3.87	1440	7.47	161.8	366.8	21.8	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW230	19/10/2020	14/04/2021	14/04/2021	19.01	-	15.223	405.416	390.193	390.193	Good					205						Hydrasleeve
0207	MW232	1/04/2020	20/10/2020	20/10/2020	12.02	-	11.278	405.898	394.620	394.620	Good	4.89	311.5	7.28	160.2	365.2	24.2	Clear	Clear	No odour	No sheen	Hydrasleeve. Parameters collected with bailer as hydrasleeve was not full.
0207	MW232	20/10/2020	14/04/2021	14/04/2021	12.04	-	11.102	405.898	394.796	394.796	Good	2.45	456.2	7.35	151	356	26	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW233	26/03/2020	21/10/2020	21/10/2020	17.85	-	15.854	406.470	390.616	390.616	Good	2.39	871	7.53	164.4	369.4	23	Turbid	Light Brown	No odour	No sheen	Hydrasleeve
0207	MW233	21/10/2020	17/04/2021	17/04/2021	17.84	-	15.968	406.470	390.502	390.502	Good	0.78	1778	7.87	94.8	299.8	22	Turbid	Light brown	No odour	No sheen	Hydrasleeve
0207	MW235	1/04/2020	20/10/2020	20/10/2020	22.63	-	16.214	406.308	390.094	390.094	Good	1.9	1550	7.26	196.5	401.5	22.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW235	20/10/2020	14/04/2021	14/04/2021	22.56	-	14.283	406.308	392.025	392.025	Good	0.15	2186		118.7	323.7	22.7	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW236	1/04/2020	None-bailed	20/10/2020	16.75	-	15.961	405.653	389.692	389.692	Good	2.54	1715	7.08	184.3	389.3	22.1	Turbid	Light Brown	No odour	No sheen	Grab sample with bailer due to insufficient water column for hydrasleeve.

Property ID	Well ID	Date Hydrasleeve Installed	Date Hydrasleeve Sampled	Gauging Date	Well Depth (mbtoc)	Depth to LNAPL (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Corrected Groundwater Elevation (mAHD)*	Condition of Gatic	DO (mg/L) *Field measurement*	EC (µS/cm) *Field measurement*	pH *Field measurement*	E_r (mV) *Field measurement*	E_h (mV)	Temp (°C) *Field measurement*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0207	MW236	None-bailed	None-bailed	14/04/2021	16.74	-	16.152	405.653	389.501	389.501	Good	1.81	2440	7.05	128.3	333.3	23.5	Turbid	Brown	No odour	No sheen	Grab sample collected with bailer due to insufficient water column.
0207	MW241	1/04/2020	20/10/2020	19/10/2020	18.09	-	15.851	405.883	390.032	390.032	Damaged	3.87	832	7.82	199.4	404.4	22.1	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW241	20/10/2020	14/04/2021	14/04/2021	18.1	-	15.958	405.883	389.925	389.925	Good	3.79	1184	7.2	118.3	323.3	23	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW242	26/03/2020	23/10/2020	20/10/2020	20.11	-	14.772	402.030	387.258	387.258	Good	1.26	1611	-	126	331	22.3	Low	Clear	No odour	No sheen	Hydrasleeve. Well standpipe partially repaired since last visit & J cap replaced.
0207	MW242	23/10/2020	20/04/2021	20/04/2021	20.09	-	14.885	402.030	387.145	387.145	Damaged	1.73	3942	7.04	93.8	298.8	25	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW245	26/03/2020	20/10/2020	20/10/2020	21.89	-	15.754	402.981	387.227	387.227	Good	3.15	1582	7.13	153.4	358.4	25	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW245	20/10/2020	20/04/2021	20/04/2021	20.89	-	15.981	402.981	387.000	387.000	Good	-	-	-	-	-	-	Clear	Clear	No odour	No sheen	Hydrasleeve. No parameters
0207	MW249	1/04/2020	20/10/2020	19/10/2020	18.84	-	15.138	404.769	389.631	389.631	Good	5.18	1511	7.68	198.7	403.7	21.1	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW249	20/10/2020	14/04/2021	14/04/2021	18.87	-	15.268	404.769	389.501	389.501	Good	4.66	2209	7.21	97.8	302.8	23.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW252	1/04/2020	20/10/2020	20/10/2020	16.65	-	15.633	406.162	390.529	390.529	Good	1.35	545	7.13	169.9	374.9	22.5	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW252	20/10/2020	None-bailed	14/04/2021	16.63	-	15.804	406.162	390.358	390.358	Good	2.47	1233	7.15	126.5	331.5	25.9	Turbid	Brown	No odour	No sheen	Grab sample collected with bailer due to insufficient water column.
0207	MW253	1/04/2020	20/10/2020	19/10/2020		-	14.249	403.079	388.830	388.830	Good	0.62	1999	7	207.6	412.6	23.6	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW253	20/10/2020	14/04/2021	14/04/2021	18.16	-	14.299	403.079	388.780	388.780	Good	0.51	2915	7.06	99.7	304.7	23.9	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW254	1/04/2020	20/10/2020	19/10/2020	16.41	-	14.228	403.050	388.822	388.822	Good	1.79	1436	7.05	276	481	22.9	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW254	20/10/2020	14/04/2021	14/04/2021	16.4	-	14.281	403.050	388.769	388.769	Good	2.24	2013	7.21	195.3	400.3	21.3	Turbid	Light brown	No odour	No sheen	Hydrasleeve
0207	MW255	26/03/2020	21/10/2020	20/10/2020	24.05	-	13.086	397.784	384.698	384.698	Good	2.69	2334	7.42	169.9	374.9	20.1	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW255	21/10/2020	13/04/2021	13/04/2021	24.07	-	13.236	397.784	384.548	384.548	Good	3.03	2754	7.42	134.5	339.5	20.8	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW257	26/03/2020	21/10/2020	21/10/2020	23.86	-	14.653	400.833	386.180	386.180	Good	0.5	650	7.33	-108.8	96.2	21.1	Low	Clear	Organic Odour	No sheen	Hydrasleeve
0207	MW257	21/10/2020	17/04/2021	17/04/2021	23.93	-	14.679	400.833	386.154	386.154	Good	0.23	4854	7.57	-10.8	194.2	21.7	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW262	24/03/2020	21/10/2020	21/10/2020	17.84	-	12.965	398.329	385.364	385.364	Good	0.79	1798	7.65	99.6	304.6	21.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW262	21/10/2020	19/04/2021	19/04/2021	17.84	-	12.836	398.329	385.493	385.493	Good	1.56	5347	7.91	140.6	345.6	22.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW264	21/10/2019	22/10/2020	22/10/2020	12.05	-	8.459	392.755	384.296	384.296	Good	0.47	2492	-	-14.4	190.6	23.2	Low	Light Grey	No odour	No sheen	Hydrasleeve
0207	MW264	22/10/2020	13/04/2021	13/04/2021	11.05	-	9.183	392.755	383.572	383.572	Good	0.41	2970	7.23	21.7	226.7	21.8	Turbid	Light grey	Slight organic odour	No sheen	Hydrasleeve
0207	MW265	23/03/2020	12/04/2021	12/04/2021	19.12	-	17.46	408.398	390.938	390.938	Good	1.27	988	7.37	89.6	294.6	23.5	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW266	23/03/2020	20/04/2021	20/04/2021	21.35	-	14.466	401.316	386.850	386.850	Good	0.65	6263	6.89	110.7	315.7	26.9	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW267	24/03/2020	15/04/2021	15/04/2021	46.97	-	14.062	401.392	387.330	387.330	Good	0.05	1733	10.66	36.8	241.8	27.6	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW268	24/03/2020	15/04/2021	15/04/2021	20.1	-	13.282	401.323	388.041	388.041	Good	0.29	4553	8.6	107.2	312.2	21.5	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW269	25/03/2020	21/10/2020	21/10/2020	87.16	-	34.352	401.958	367.606	367.606	Good	-	2260	-	-244.5	-39.5	-	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW269	21/10/2020	15/04/2021	15/04/2021	88.12	-	34.424	401.958	367.534	367.534	Good	0.9	3823	12.07	-82.2	122.8	24	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW270	24/03/2020	15/04/2021	15/04/2021	19.58	-	13.074	404.078	391.004	391.004	Good	0.79	5459	6.82	305.5	510.5	28.5	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW271	24/03/2020	15/04/2021	15/04/2021	62.78	-	14.482	403.855	389.373	389.373	Good	0.36	1609	8.83	-165.7	39.3	26.3	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW272	26/03/2020	21/10/2020	21/10/2020	20.03	-	12.734	397.972	385.238	385.238	Good	2.49	2244	7.47	197	402	20.8	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW272	21/10/2020	19/04/2021	19/04/2021	20.04	-	12.836	397.972	385.136	385.136	Good					205						Hydrasleeve
0207	MW273	26/03/2020	19/04/2021	19/04/2021	66.05	-	18.841	398.044	379.203	379.203	Good	0.62	396	9.9	-99.4	105.6	26.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW274	25/03/2020	17/04/2021	17/04/2021	31.82	-	14.516	399.947	385.431	385.431	Good	0.44	2647	7.91	-74.8	130.2	22.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW275	25/03/2020	17/04/2021	17/04/2021	55.42	-	14.47	399.911	385.441	385.441	Good	0.37	3164	8.07	-92.9	112.1	22.1	Medium	Light grey	Slight organic odour	No sheen	Hydrasleeve
0207	MW276	26/03/2020	21/10/2020	21/10/2020	19.94	-	14.739	400.474	385.735	385.735	Good	0.66	2308	7.16	40	245	21.1	Low	Clear	Organic Odour	No sheen	Hydrasleeve
0207	MW276	21/10/2020	19/04/2021	19/04/2021	19.9	-	14.793	400.474	385.681	385.681	Good	0.26	6537	7.85	-7.5	197.5	24.7	Medium	Clear	Slight organic odour	No sheen	Hydrasleeve
0207	MW278	25/03/2020	16/04/2021	16/04/2021	22.15	-	10.182	404.155	393.973	393.973	Good	0.1	1785	7.62	-26.1	178.9	26.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW279	25/03/2020	16/04/2021	16/04/2021	17.97	-	9.879	406.341	396.462	396.462	Good	0.51	2142	7.64	110.6	315.6	24	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW280	24/03/2020	17/04/2021	17/04/2021	29.88	-	12.713	398.486	385.773	385.773	Good	0.06	4357	7.68	-43.8	161.2	21.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW281	2/04/2020	20/04/2021	20/04/2021	18.49	-	10.224	396.856	386.632	386.632	Good	1.93	3744	6.99	100.4	305.4	22.9	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW282	24/03/2020	15/04/2021	15/04/2021	15.98	-	6.447	397.327	390.880	390.880	Good	3.18	1302	7.29	104.9	309.9	24.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW283	24/03/2020	20/04/2021	20/04/2021	14.98	-	11.268	395.371	384.103	384.103	Good	0	2752	7.03	-8.8	196.2	24.1	Clear	Clear	Slight organic odour	No sheen	Hydrasleeve
0207	MW285	23/03/2020	15/04/2021	15/04/2021	10.77	-	6.676	398.331	391.655	391.655	Good	1.79	3056	8.29	66.4	271.4	22.3	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW288	24/03/2020	21/04/2021	21/04/2021	21.94	-	17.289	402.161	384.872	384.872	Good	0.06	1567	7.65	-48.5	156.5	21.2	Turbid	Clear	No odour	No sheen	Hydrasleeve
0207	MW289	24/03/2020	21/04/2021	21/04/2021	64.96	-	61.919	402.072	340.153	340.153	Good	1.01	1222	7.83	38.5	243.5	24.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW290	24/03/2020	21/04/2021	21/04/2021	19.69	-	16.151	403.688	387.537	387.537	Good	0.11	5927	5.71	20.4	225.4	24.8	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW291	25/03/2020	22/10/2020	21/10/2020	56.23	-	24.218	403.709	379.491	379.491	Good	0.32	1635	-	47.5	252.5	22.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW291	22/10/2020	21/04/2021	21/04/2021	56.05	-	23.394	403.709	380.315	380.315	Good	0.13	3126	7.1	47	252	27.9	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW292	24/03/2020	19/04/2021	19/04/2021	18.95	-	9.167	401.818	392.651	392.651	Good	0.04	12721	8.52	37.3	242.3	24.2	Medium	Clear	Slight organic odour	No sheen	Hydrasleeve
0207	MW293	24/03/2020	19/04/2021	19/04/2021	67.3	-	39.639	402.021	362.382	362.382	Good	2.23	8642	12.63	-16.8	188.2	25.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW294	24/03/2020	15/04/2021	15/04/2021	18.62	-	10.239	403.780	393.541	393.541	Good	0.17	2083	7.6	82.3	287.3	26.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW295	25/03/2020	21/10/2020	21/10/2020	69.84	-	9.123	402.837	393.714	393.714	Good	-	888	-	-194.5	10.5	-	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW295	21/10/2020	15/04/2021	15/04/2021	69.47	-	9.643	402.837	393.194	393.194	Good	0.19	1354	9.92	-164.6	40.4	22.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW296	24/03/2020	15/04/2021	15/04/2021	20.11	-	13.864	399.155	385.291	385.291	Good	0.71	5611	7.05	94.2	299.2	23.5	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW297	25/03/2020	22/10/2020	22/10/2020	81.9	-	23.194	399.23	376.036	376.036	Good	0.48	1457	-	24.9	229.9	21.9	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW297	22/10/2020	15/04/2021	15/04/2021	80.69	-	23.253	399.230	375.977	375.977	Good	0.02	2201	8.16	-107.6	97.4	26.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW299	26/03/2020	20/10/2020	20/10/2020	15.46	-	12.332	403.970	391.638	391.638	Good	0.69	7236	6.76	127.2	332.2	24.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW299	20/10/2020	17/04/2021	17/04/2021	15.45	-	12.286	403.970	391.684	391.684	Good	0.94	13808	6.89	101.3	306.3	23.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW300	24/03/2020	None- bailed	20/10/2020	16.45	-	15.578	403.715	388.137	388.137	Good	1.49	6691	6.83	202	407	23.7	Clear	Clear	No odour	No sheen	Grab sample collected with bailer due to insufficient water column.
0207	MW300	24/03/2020	17/04/2021	17/04/2021	16.46	-	14.632	403.715	389.083	389.083	Good	2.27	13418	6.5	159.6	364.6	23.6	Low	Clear	No odour	No sheen	Hydrasleeve. Note bailed in October 2020 however original hydrasleeve was redeployed.
1435	MW001	-	-	-	12.17	-	-	418.534	-	-	Good	-	-	-	-	-	-	-	-	-	-	Dry
1435	MW002	1/04/2020	16/04/2021	16/04/2021	20.54	-	13.094	418.219	405.125	405.125	Good	0.16	2245	7.78	-87.3	117.7	20.4	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW003	1/04/2020	16/04/2021	16/04/2021	-	-	-	418.054	-	-	Damaged	0.1	2248	7.37	40.4	245.4	24.8	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW004	1/04/2020	16/04/2021	16/04/2021	22.49	-	15.186	417.378	402.192	402.192	Good	0.84	1084	8.55	-39.1	165.9	23.9	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N/A - well lost
1435	MW006	1/04/2020	16/04/2021	16/04/2021	27.06	-	13.186	416.459	403.273	403.273	Good	1.74	1392	8.62	0.4	205.4	26.9	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW007	1/04/2020	16/04/2021	16/04/2021	24.95	-	14.438	416.413	401.975	401.975	Good	1.25	1267	7.9	56.1	261.1	24.9	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW008	1/04/2020	16/04/2021	16/04/2021	22.08	-	14.757	415.192	400.435	400.435	Good	0.26	1617	7.94	91.8	296.8	25.5	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW009	1/04/2020	16/04/2021	16/04/2021	25.9	-	15.448	417.989	402.541	402.541	Good	0.83	2467	7.48	85.2	290.2	25.3	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW010	1/04/2020	16/04/2021	16/04/2021	26.85	-	15.826	418.024	402.198	402.198	Good	0.04	1614	8.28	-13.4	191.6	23.1	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW011	1/04/2020	16/04/2021	16/04/2021	27.42	-	16.092	418.289	402.197	402.197	Good	0.35	1496	8.09	-16.5	188.5	21.3	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW012		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N/A - well lost
1435	MW013	1/04/2020	16/04/2021	16/04/2021	-	-	-	415.927	-	-	Good	1.33	1798	7.98	89.3	294.3	27.3	Clear	Clear	No odour	No sheen	Hydrasleeve

* Corrected groundwater elevation provides the groundwater elevation following correction for the presence of LNAPL (if present).
mbtoc is metres below top of casing
mAHD is metres above Australian height datum
LNAPL is light non-aqueous phase liquid
DO is dissolved oxygen
EC is electrical conductivity
E_h is oxidation reduction potential
Oxidation reducation potential (E_r) measured with a platinum electrode and a silver/silver chloride reference electrode (E_r) and converted to E_h by $E_h = E_r + 205$ mV (based on a groundwater temperature of 21°C)
Temp is Temperature
µS/cm is microsiemens per centrimetre
ºC is degrees Celcius
mV is millivolts
pH was not measured at all locations due to a faulty sensor on the water quality meter.

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																		0.07	
PFAS NEMP 2020 Recreational Water													**10**																		**2**	

Location Code	Date	Sample Type	Lab Report																																	
MW001	31/01/2014	Normal	EB1402209	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-
MW001	26/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW001	27/05/2016	Normal	EB1614022	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW002	31/01/2014	Normal	EB1402209	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-
MW002	26/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW002	27/05/2016	Normal	EB1614022	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW002	28/04/2017	Normal	EB1708623	-	<0.02	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW003	27/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW003	18/10/2018	Normal	EB1826389	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW003	16/04/2019	Normal	EB1910259	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW003	24/10/2019	Normal	EB1928471	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW003	24/03/2020	Normal	EB2008683	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW003	24/03/2020	Field_D	EB2008693	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW003	21/10/2020	Normal	EB2027835	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW003	13/04/2021	Normal	EB2110958	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW004	27/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW004	16/04/2019	Normal	EB1910265	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW004	16/04/2019	Field_D	EB1910265	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW004	16/04/2019	Interlab_D	RN1231107	-	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.05	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW005	27/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW005	12/10/2015	Normal	EB1531260	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW005	12/10/2015	Field_D	EB1531260	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW005	12/10/2015	Interlab_D	475642	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW006	27/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW006	4/02/2016	Normal	EB1603065	-	-	-	-	-	0.05	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW006	10/03/2017	Normal	EB1704807	-	-	-	0.14	-	0.12	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.26	-
MW006	16/04/2019	Normal	EB1910263	-	<0.02	<0.02	0.12	<0.02	0.1	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.22	0.22
MW007	27/05/2014	Normal	EB1412900	-	-	-	-	-	1.44	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW007	26/05/2016	Normal	EB1614023	-	-	-	-	-	0.46	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW008	27/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW009	26/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW009	8/02/2016	Normal	EB1603686	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW009	29/03/2017	Normal	EB1706413	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW010	6/06/2014	Normal	EB1413760	-	-	-	-	-	2.25	-	-	-	-	-	-	0.28	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW010	2/02/2016	Normal	EB1603065	-	0.43	-	2.79	-	3.07	-	<0.02	-	0.65	-	0.19	0.35	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**5.86**	-
MW010	30/03/2016	Normal	EB1608593	-	-	-	-	-	1.14	-	-	-	-	-	-	0.81	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW010	3/05/2017	Normal	EB1709203	-	0.61	0.66	3.04	0.24	4.55	-	<0.02	<0.1	0.58	0.14	0.25	0.5	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.59**	10.6
MW010	3/05/2017	Field_D	EB1709203	-	0.67	0.72	3.37	0.27	4.91	-	<0.02	<0.1	0.65	0.14	0.28	0.57	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**8.28**	11.58
MW010	3/05/2017	Interlab_D	AECO06/170508	-	0.4	-	2.3	-	3	-	<0.02	0.19	0.54	0.13	0.14	0.3	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	-	-
MW011	6/06/2014	Normal	EB1413760	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW011	12/10/2015	Normal	EB1531260	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW011	10/01/2017	Normal	EB1700645	-	-	-	0.03	-	0.06	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.09	-
MW011	17/03/2017	Normal	EB1705316	-	-	-	0.03	-	0.02	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.05	-
MW011	26/05/2017	Normal	EB1710855	-	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.05	0.05
MW011	19/10/2017	Normal	EB1721721	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW012	13/08/2014	Normal	ES1418075	-	-	-	-	-	0.05	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW012	19/10/2016	Normal	EB1625209	-	-	-	0.21	-	0.07	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.28	-
MW012	19/10/2017	Normal	EB1721728	-	0.03	0.03	0.22	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.29	0.4
MW013	13/08/2014	Normal	ES1418075	-	-	-	-	-	0.06	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW013	16/03/2016	Normal	EB1607658	-	-	-	-	-	0.05	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW013	6/04/2017	Normal	EB1707193	-	-	-	0.08	-	0.02	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.1	-
MW013	6/04/2017	Field_D	EB1707193	-	-	-	0.1	-	0.02	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.12	-
MW013	20/04/2017	Interlab_D	AECO06_170410	-	-	-	0.29	-	0.13	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.42	-
MW014	13/08/2014	Normal	ES1418075	-	-	-	-	-	2.7	-	-	-	-	-	-	0.17	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW014	13/08/2014	Field_D	ES1418075	-	-	-	-	-	2.28	-	-	-	-	-	-	0.14	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW014	13/08/2014	Interlab_D	428995	-	-	-	-	-	0.61	-	-	-	-	-	-	0.19	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-
MW014	5/02/2016	Normal	EB1603065	-	0.98	-	7.07	-	2.3	-	<0.02	-	1.5	-	0.18	0.16	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**9.37**	-
MW014	4/04/2017	Normal	EB1707189	-	0.78	0.8	5.36	0.22	2.35	-	<0.02	<0.1	1.22	0.22	0.12	0.22	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.71**	11.3
MW015	13/08/2014	Normal	ES1418075	-	-	-	-	-	1.02	-	-	-	-	-	-	0.03	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW015	9/02/2016	Normal	EB1603686	-	-	-	-	-	0.92	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW015	21/03/2017	Normal	EB1705928	-	0.1	0.09	0.92	0.06	1.28	-	<0.02	<0.1	0.12	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.2**	2.6
MW016	13/08/2014	Normal	ES1418075	-	-	-	-	-	1.44	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW016	16/03/2016	Normal	EB1607656	-	-	-	-	-	1.8	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW016	27/04/2017	Interlab_D	AECO06_170502	-	0.32	-	2.3	-	2.6	-	<0.02	0.11	0.41	0.087	0.066	0.15	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	**4.9**	-
MW016	27/04/2017	Normal	EB1708638	-	0.54	0.38	4.45	0.2	3.46	-	<0.02	<0.1	0.05	0.03	<0.02	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.91**	9.21
MW016	27/04/2017	Field_D	EB1708638	-	0.51	0.36	4.22	0.18	2.99	-	<0.02	<0.1	0.05	0.02	<0.02	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.21**	8.43
MW017	13/08/2014	Normal	ES1418075	-	-	-	-	-	3.13	-	-	-	-	-	-	0.09	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW017	10/02/2016	Normal	EB1603686	-	0.42	-	3.38	-	4.89	-	<0.02	-	0.61	-	0.07	0.15	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**8.27**	-
MW017	17/03/2016	Normal	EB1614432	-	0.26	0.28	1.74	0.29	4.85	-	<0.02	<0.1	0.28	0.09	0.07	0.1	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.59**	7.96
MW017	25/08/2017	Normal	EB1717510	-	0.25	0.23	2.19	0.26	3.96	-	<0.02	<0.1	0.27	0.05	0.04	0.12	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.15**	7.37
MW017	25/02/2020	Normal	EB2005413	-	0.26	0.28	2.35	0.24	4.91	-	<0.02	<0.1	0.41	0.07	0.07	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.26**	8.73
MW017	25/02/2020	Field_D	EB2005413	-	0.25	0.23	2.11	0.28	4.76	-	<0.02	<0.1	0.34	0.06	0.06	0.13	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.87**	8.22
MW017	25/02/2020	Interlab_D	RN1266062	-	0.23	0.21	1.9	0.16	3.8	<0.01	<0.01	0.052	0.29	0.06	0.047	0.11	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW018	13/08/2014	Normal	ES1418075	-	-	-	-	-	17.5	-	-	-	-	-	-	0.63	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids												PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																		0.07	
PFAS NEMP 2020 Recreational Water													10																		2	

Location Code	Date	Sample Type	Lab Report																															
MW018	26/09/2014	Normal	EB1443316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW018	26/09/2014	Field_D	EB1443316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW018	26/09/2014	Interlab_D	433638	-	-	-	-	-	31	-	-	-	-	-	0.89	-	-	-	-	-	-	-	-	0.03	<0.01	-	-	-	-	-	-	-	-	-	-
MW018	8/02/2016	Normal	EB1603686	-	1.3	-	9.22	-	21.4	-	<0.02	-	2.41	-	0.29	0.76	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**30.62**	-
MW019	13/08/2014	Normal	ES1418075	-	-	-	-	-	<0.02	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW019	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW019	21/09/2016	Normal	EB1623093	-	-	-	0.05	-	<0.01	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.05	-
MW019	17/10/2017	Normal	EB1721736	-	<0.02	<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	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.08**	0.08
MW019	22/11/2018	Normal	EB1828779	-	<0.02	<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	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW019	22/11/2018	Field_D	EB1828779	-	<0.02	<0.02	0.05	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW019	22/11/2018	Interlab_D	AECO06_181128_1	-	<0.01	<0.01	0.043	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.05	<0.01	<0.05	-	-	-
MW019	17/04/2019	Normal	EB1910283	-	<0.02	<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	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW019	17/04/2019	Field_D	EB1910283	-	<0.02	<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	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW019	17/04/2019	Interlab_D	RN1231109	-	<0.01	<0.01	0.03	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW019	24/10/2019	Normal	EB1928475	-	<0.02	<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	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW019	26/03/2020	Normal	EB2008688	-	<0.02	<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	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.08**	0.08
MW019	21/10/2020	Normal	EB2027844	-	<0.02	<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	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW019	13/04/2021	Normal	EB2110935	-	<0.02	<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	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW020	13/08/2014	Normal	ES1418075	-	-	-	-	-	7.56	-	-	-	-	-	1.06	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW020	16/03/2016	Normal	EB1607660	-	2.83	-	33	-	39.2	-	<0.02	-	5.33	-	0.51	1.66	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**72.2**	-
MW020	20/09/2016	Normal	EB1623085	-	4.84	3.93	30.1	1.83	39.8	-	<0.02	<0.1	6.86	1.04	1.14	2.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**69.9**	91.6
MW020	18/10/2017	Normal	EB1721734	-	2.7	2.61	17.5	1.32	7.91	-	<0.02	0.4	5.63	1.19	0.88	1.68	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	-	**25.4**	41.8
MW020	17/04/2018	Normal	EB1809896	-	1.96	2.01	15.4	1.06	21.5	-	<0.02	0.6	3.76	0.78	0.64	1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	-	**36.9**	48.7
MW020	17/04/2018	Field_D	EB1809896	-	2.02	1.97	15.5	1.05	22.2	-	<0.02	0.6	3.72	0.78	0.66	1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	-	**37.7**	49.5
MW020	17/04/2018	Interlab_D	AECO06_180424	-	1.4	1.3	12	0.74	15	<0.01	<0.01	0.48	2.7	0.58	0.43	0.79	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.017	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW020	8/05/2019	Normal	EB1911734	-	1.95	1.99	19.3	0.98	28.1	-	<0.02	0.5	4.14	0.79	0.6	1.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**47.4**	59.5
MW020	27/03/2020	Normal	EB2009338	-	2.62	2.24	20	1.54	14.9	-	<0.02	0.9	4.38	1.09	0.96	1.54	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**34.9**	50.2
MW021	13/08/2014	Normal	ES1418075	-	-	-	-	-	2.47	-	-	-	-	-	0.06	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW021	5/02/2016	Normal	EB1603065	-	0.25	-	2	-	3.56	-	<0.02	-	0.31	-	0.07	0.1	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**5.56**	-
MW021	21/03/2017	Normal	EB1705927	-	0.28	0.23	2.03	0.23	4.19	-	<0.02	<0.1	0.27	<0.02	0.04	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**6.22**	7.37
MW021	18/04/2018	Normal	EB1809893	-	0.2	0.17	1.46	0.16	3.22	-	<0.02	<0.1	0.24	0.05	0.04	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**4.68**	5.62
MW021	18/10/2018	Interlab_D	AECO06_181024	-	0.16	0.15	1.4	0.12	3.8	<0.01	<0.01	<0.05	0.22	0.046	0.034	0.08	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW021	18/10/2018	Normal	EB1826392	-	0.18	0.15	1.26	0.14	2.46	-	<0.02	<0.1	0.19	0.04	0.03	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**3.72**	4.53
MW021	18/10/2018	Field_D	EB1826392	-	0.16	0.12	1.32	0.14	2.58	-	<0.02	<0.1	0.22	0.04	0.03	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**3.9**	4.69
MW021	10/04/2019	Normal	EB1909634	-	0.16	0.18	1.58	0.17	2.91	-	<0.02	<0.1	0.24	0.04	0.04	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**4.49**	5.41
MW021	27/03/2020	Normal	EB2009334	-	0.21	0.24	1.87	0.25	4.44	-	<0.02	<0.1	0.27	0.06	0.06	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**6.31**	7.51
MW021	19/04/2021	Normal	EB2110949	-	0.18	0.23	1.62	0.27	4.48	-	<0.02	<0.1	0.28	0.06	0.05	0.12	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**6.1**	7.29
MW022	13/08/2014	Normal	ES1418075	-	-	-	-	-	0.48	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW022	14/07/2016	Normal	EB1618080	-	-	-	0.27	-	0.61	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	0.88	-
MW022	14/07/2016	Interlab_D	508124	-	-	-	0.34	-	0.97	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	1.31	-
MW022	14/07/2016	Field_D	EB1618080	-	-	-	0.21	-	0.56	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	0.77	-
MW022	20/10/2016	Normal	EB1625194	-	-	-	0.46	-	0.92	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	1.38	-
MW022	2/04/2020	Normal	EB2009346	-	0.03	0.04	0.31	0.04	0.7	-	<0.02	<0.1	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	1.01	1.18
MW022	22/10/2020	Normal	EB2027828	-	0.03	0.03	0.24	0.03	0.6	-	<0.02	<0.1	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	0.84	0.99
MW022	28/04/2021	Normal	EB2111757	-	0.02	0.02	0.18	<0.02	0.37	-	<0.02	<0.1	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	0.55	0.63
MW023	13/08/2014	Normal	ES1418075	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW023	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW023	21/03/2017	Normal	EB1705929	-	-	-	<0.02	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW023	12/04/2019	Normal	EB1909697	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW024	27/08/2014	Normal	EB1441408	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW024	18/10/2018	Normal	EB1826391	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW025	27/08/2014	Normal	EB1441408	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW026	27/08/2014	Normal	EB1441408	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW027	27/08/2014	Normal	EB1441408	-	-	-	-	-	8.23	-	-	-	-	-	0.39	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW027	30/03/2016	Normal	EB1608596	-	0.94	-	5.64	-	5.53	-	<0.02	-	0.47	-	0.08	0.75	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**11.17**	-
MW027	2/05/2017	Normal	EB1709201	-	0.91	1.13	7.27	0.67	17.1	-	<0.02	0.2	1.23	0.23	0.29	0.62	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**24.37**	29.6
MW027	2/05/2017	Normal	EB1709201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**24.4**	-
MW027	2/05/2017	Field_D	EB1709201	-	0.82	1.05	6.54	0.57	17	-	<0.02	0.2	1.09	0.2	0.26	0.55	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**23.5**	28.28
MW027	2/05/2017	Field_D	EB1709201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**23.54**	-
MW027	2/05/2017	Interlab_D	AECO06/170508	-	0.68	-	6.6	-	10	-	<0.02	0.25	0.43	0.26	0.17	0.43	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	-	-	-
MW027	18/04/2018	Normal	EB1809894	-	0.85	0.89	6.87	0.55	15.4	-	<0.02	0.3	1.35	0.28	0.23	0.46	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**22.3**	27.2
MW027	18/04/2019	Normal	EB1910276	-	0.65	0.81	5.92	0.49	9.79	-	<0.02	<0.1	1.16	0.22	0.18	0.4	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**15.7**	19.6
MW028	27/08/2014	Normal	EB1441408	-	-	-	-	-	2.27	-	-	-	-	-	0.11	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW028	30/03/2016	Normal	EB1608596	-	0.42	-	2.32	-	2.53	-	<0.02	-	0.15	-	0.03	0.4	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**4.85**	-
MW028	2/05/2017	Normal	EB1709201	-	0.39	0.5	3	0.22	4.12	-	<0.02	<0.1	0.42	0.08	0.1	0.21	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	**7.12**	9.04
MW029	27/08/2014	Normal	EB1441408	-	-	-	-	-	0.04	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW029	26/05/2016	Normal	EB1614024	-	-	-	-	-	0.09	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW029	6/04/2017	Normal	EB1707194	-	-	-	0.34	-	0.1	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.44	-
MW029	11/04/2019	Normal	EB1909706	-	0.05	0.05	0.35	<0.02	0.13	-	<0.02	<0.1	0.07	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.05	-	0.48	0.65
MW030	27/08/2014	Interlab_D	430575	-	-	-	-	-	1.3	-	-	-	-	-	0.17	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW030	27/08/2014	Normal	EB1441408	-	-	-	-	-	2.2	-	-	-	-	-	0.16	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW030	27/08/2014	Field_D	EB1441408	-	-	-	-	-	2.8	-	-	-	-	-	0.16	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW030	5/02/2016	Normal	EB1603065	-	1.01	-	6.97	-	3.46	-	<0.02	-	1.5	-	0.22	0.25	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**10.43**	-
MW030	5/02/2016	Field_D	EB1603065	-	-	-	-	-	3.9	-	-	-	-	-	0.16	-	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																			0.07	
PFAS NEMP 2020 Recreational Water													**10**																			**2**	

Location Code	Date	Sample Type	Lab Report																																
MW030	5/02/2016	Interlab_D	488333	-	-	-	-	-	<0.04	-	-	-	-	-	-	0.17	-	-	-	-	-	-	-	<0.2	<0.04	-	-	-	-	-	-	-	-	-	-
MW030	24/03/2017	Normal	EB1705977	-	-	-	5.47	-	3.02	-	-	-	-	-	-	0.22	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	**8.49**	-
MW031	27/08/2014	Normal	EB1441408	-	-	-	-	-	11.5	-	-	-	-	-	-	0.96	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW031	27/05/2016	Normal	EB1614025	-	-	-	-	-	13.5	-	-	-	-	-	-	0.48	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-
MW031	28/04/2017	Interlab_D	AECO06_170502	-	0.39	-	2.8	-	4.3	-	<0.02	0.13	0.62	0.12	0.093	0.23	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	**7.1**	-
MW031	28/04/2017	Normal	EB1708621	-	0.88	0.56	7.2	0.4	7.24	-	<0.02	<0.1	0.16	0.1	0.03	0.32	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**14.4**	16.9
MW031	28/04/2017	Normal	EB1708621	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14.44**	-
MW031	28/04/2017	Field_D	EB1708621	-	0.92	0.54	6.76	0.4	7.69	-	<0.02	<0.1	0.15	0.11	0.04	0.32	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**14.4**	16.93
MW031	28/04/2017	Field_D	EB1708621	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14.45**	-
MW031	8/05/2019	Normal	EB1911746	-	0.31	0.28	2.11	0.15	4.67	-	<0.02	<0.1	0.51	0.09	0.07	0.17	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.78**	8.36
MW031	26/03/2020	Normal	EB2008689	-	0.43	0.41	2.77	0.22	6.69	-	<0.04	<0.2	0.6	0.33	0.11	0.23	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	-	**9.46**	11.8
MW032	27/08/2014	Normal	EB1441408	-	-	-	-	-	3.75	-	-	-	-	-	-	0.14	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW032	5/02/2016	Normal	EB1603065	-	0.36	-	2.65	-	6.73	-	<0.02	-	0.5	-	0.06	0.21	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**9.38**	-
MW032	21/03/2017	Normal	EB1705931	-	-	-	2.73	-	7.95	-	-	-	-	-	-	0.18	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	**10.68**	-
MW032	18/04/2019	Normal	EB1910273	-	0.24	0.31	2.69	0.13	6.26	-	<0.02	<0.1	0.34	0.07	0.06	0.16	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**8.95**	10.3
MW032	30/03/2020	Normal	EB2009344	-	0.27	0.3	2.49	0.21	5.93	-	0.04	0.1	0.33	0.07	0.07	0.18	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**8.42**	10
MW032	19/04/2021	Normal	EB2110956	-	0.22	0.29	1.85	0.14	5.33	-	<0.02	<0.1	0.28	0.07	0.05	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.18**	8.37
MW033	27/08/2014	Normal	EB1441408	-	-	-	-	-	1.17	-	-	-	-	-	-	0.09	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW033	5/02/2016	Normal	EB1603065	-	-	-	-	-	1.22	-	-	-	-	-	-	0.09	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW033	24/03/2017	Normal	EB1705982	-	-	-	1.8	-	0.83	-	-	-	-	-	-	0.09	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	**2.63**	-
MW034	27/08/2014	Normal	EB1441408	-	-	-	-	-	11.2	-	-	-	-	-	-	0.39	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW034	8/02/2016	Normal	EB1603686	-	0.94	-	7	-	16.7	-	<0.02	-	1.66	-	0.18	0.54	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**23.7**	-
MW034	8/02/2016	Field_D	EB1603686	-	-	-	-	-	16.3	-	-	-	-	-	-	0.49	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW034	8/02/2016	Interlab_D	489126	-	-	-	-	-	1.3	-	-	-	-	-	-	0.46	-	-	-	-	-	-	-	<0.2	<0.04	-	-	-	-	-	-	-	-	-	-
MW034	21/03/2017	Normal	EB1705930	-	-	-	4.91	-	21.4	-	-	-	-	-	-	0.42	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	**26.31**	-
MW034	25/04/2018	Normal	EB1810802	-	0.36	0.35	2.71	0.21	17.3	-	<0.02	0.2	0.55	0.13	0.11	0.26	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**20**	22.2
MW034	8/05/2019	Normal	EB1911743	-	0.29	0.26	2.53	0.15	12	-	<0.02	<0.1	0.48	0.1	0.08	0.22	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**14.5**	16.1
MW035	27/08/2014	Normal	EB1441408	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW036	26/09/2014	Normal	EB1443316	-	-	-	-	-	2.96	-	-	-	-	-	-	0.13	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW036	26/09/2014	Field_D	EB1443316	-	-	-	-	-	2.81	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW036	26/09/2014	Interlab_D	433638	-	-	-	-	-	4.1	-	-	-	-	-	-	0.16	-	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-
MW036	4/02/2016	Normal	EB1603065	-	0.41	-	4.7	-	2.79	-	<0.02	-	0.76	-	0.09	0.16	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**7.49**	-
MW036	24/03/2017	Normal	EB1705996	-	-	-	5.02	-	3.53	-	-	-	-	-	-	0.19	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	**8.55**	-
MW037	28/10/2014	Normal	EB1445390	-	-	-	-	-	5.25	-	-	-	-	-	-	0.94	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW037	17/03/2016	Normal	EB1607652	-	1	-	6.39	-	4.03	-	<0.02	-	1.25	-	0.12	0.31	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**10.42**	-
MW037	6/04/2017	Normal	EB1707191	-	-	-	7.83	-	7.59	-	-	-	-	-	-	0.57	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	**15.42**	-
MW037	18/04/2019	Normal	EB1910284	-	0.39	0.38	2.4	0.15	1.64	-	<0.02	<0.1	0.65	0.1	0.08	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.04**	5.94
MW037	18/04/2019	Field_D	EB1910284	-	0.37	0.38	2.17	0.13	1.45	-	<0.02	<0.1	0.64	0.12	0.07	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.62**	5.48
MW037	18/04/2019	Interlab_D	RN1231110	-	0.34	0.28	2.1	0.093	1.9	<0.01	<0.01	0.14	0.46	0.071	0.064	0.12	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.05	-	-	-
MW038	28/10/2014	Normal	EB1445390	-	-	-	-	-	0.24	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW038	5/02/2016	Normal	EB1603065	-	-	-	-	-	0.6	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW038	1/04/2016	Normal	EB1608598	-	0.05	-	0.18	-	0.39	-	<0.02	-	<0.02	-	<0.02	0.06	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	0.57	-
MW038	18/10/2017	Normal	EB1721735	-	0.04	0.06	0.34	0.03	0.77	-	<0.02	<0.1	0.07	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.11	1.35
MW038	19/10/2018	Normal	EB1826393	-	0.04	0.03	0.24	<0.02	0.39	-	<0.02	<0.1	0.04	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.63	0.77
MW038	16/04/2019	Normal	EB1910260	-	0.03	0.03	0.21	<0.02	0.42	-	<0.02	<0.1	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.63	0.75
MW038	24/10/2019	Normal	EB1928474	-	0.03	0.03	0.17	<0.02	0.28	-	<0.02	<0.1	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.45	0.57
MW038	26/03/2020	Normal	EB2008687	-	0.04	0.04	0.26	0.03	0.59	-	<0.02	<0.1	0.06	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.85	1.05
MW038	21/10/2020	Normal	EB2027843	-	0.03	0.03	0.18	<0.02	0.38	-	<0.02	<0.1	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.56	0.68
MW038	15/04/2021	Normal	EB2110944	-	0.04	0.04	0.22	0.02	0.5	-	<0.02	<0.1	0.06	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.72	0.91
MW039	29/10/2014	Normal	EB1445390	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW039	5/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW040	29/10/2014	Normal	EB1445390	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW040	19/10/2016	Normal	EB1625191	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.02	-
MW040	18/10/2017	Normal	EB1721729	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW041	29/10/2014	Normal	EB1445390	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW041	5/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW041	3/05/2017	Normal	EB1709216	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW042	29/10/2014	Normal	EB1445390	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW042	5/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW043	29/10/2014	Normal	EB1445390	-	-	-	-	-	14.2	-	-	-	-	-	-	0.83	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW043	8/02/2016	Normal	EB1603686	-	1.08	-	7.57	-	10.7	-	<0.02	-	1.78	-	0.19	0.42	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**18.27**	-
MW043	8/02/2016	Field_D	EB1603686	-	-	-	-	-	11.2	-	-	-	-	-	-	0.48	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW043	8/02/2016	Interlab_D	489126	-	-	-	-	-	0.5	-	-	-	-	-	-	0.42	-	-	-	-	-	-	-	<0.2	<0.04	-	-	-	-	-	-	-	-	-	-
MW044	16/12/2014	Normal	ES1428296	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW044	16/12/2014	Field_D	ES1428296	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW044	16/12/2014	Interlab_D	443042	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	0.04	<0.01	-	-	-	-	-	-	-	-	-	-
MW044	10/02/2016	Normal	EB1603686	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW045	17/11/2014	Normal	EB1446505	-	-	-	-	-	0.08	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW045	8/02/2016	Normal	EB1603686	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW045	23/05/2019	Normal	EB1913220	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW046	18/11/2014	Normal	EB1446505	-	-	-	-	-	2.96	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW046	18/11/2014	Field_D	EB1446505	-	-	-	-	-	2.15	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW046	18/11/2014	Interlab_D	439475	-	-	-	-	-	3	-	-	-	-	-	-	0.17	-	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-
MW046	14/07/2016	Normal	EB1618083	-	-	-	3.21	-	1.47	-	-	-	-	-	-	0.12	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	**4.68**	-

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																		0.07	
PFAS NEMP 2020 Recreational Water													**10**																		**2**	

Location Code	Date	Sample Type	Lab Report																															
MW046	12/07/2017	Normal	EB1714320	-	0.48	0.41	3.21	0.12	1.93	-	<0.02	<0.1	0.65	0.13	0.07	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.14**	7.1
MW046	12/07/2017	Field_D	EB1714320	-	0.51	0.43	3.51	0.12	1.84	-	<0.02	<0.1	0.67	0.14	0.08	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.35**	7.41
MW046	12/07/2017	Interlab_D	AECO06/170719/1	-	0.45	-	3.2	-	1.6	-	<0.02	0.13	0.78	0.17	0.082	0.11	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.05	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	-
MW047	18/11/2014	Normal	EB1446505	-	-	-	-	-	5.69	-	-	-	-	-	-	0.19	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW047	17/03/2016	Normal	EB1614434	-	1.83	1.96	9.43	0.8	6.55	-	<0.02	<0.1	2.34	0.7	0.42	0.54	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**15.98**	24.6
MW047	21/03/2017	Normal	EB1705926	-	1.37	1.68	8.69	0.66	12.1	-	<0.02	<0.1	2.48	0.44	0.35	0.87	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**20.79**	28.6
MW047	21/03/2017	Normal	EB1705926	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**20.8**	-
MW047	26/04/2017	Normal	EB1708644	-	1.69	1.35	12.1	0.52	10.2	-	<0.02	<0.1	0.54	0.18	0.04	0.45	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**22.3**	27.1
MW047	12/07/2017	Normal	EB1714312	-	1.45	1.42	8.21	0.54	13.4	-	<0.02	0.2	1.93	0.33	0.38	0.74	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**21.6**	28.6
MW047	22/11/2018	Normal	EB1828776	-	0.69	0.66	4.76	0.24	6.4	-	<0.02	0.2	1.25	0.26	0.17	0.38	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**11.2**	15
MW048	18/11/2014	Normal	EB1446505	-	-	-	-	-	0.25	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW048	9/02/2016	Normal	EB1603686	-	-	-	-	-	0.32	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW048	29/03/2017	Normal	EB1706404	-	-	-	0.62	-	0.31	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.93	-
MW049	18/11/2014	Normal	EB1446505	-	-	-	-	-	12.4	-	-	-	-	-	-	0.16	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW049	26/05/2016	Normal	EB1614016	-	-	-	-	-	8.79	-	-	-	-	-	-	0.17	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-
MW049	26/05/2016	Field_D	EB1614016	-	-	-	-	-	8.97	-	-	-	-	-	-	0.17	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-
MW049	26/05/2016	Interlab_D	503339	-	-	-	-	-	1.1	-	-	-	-	-	-	0.25	-	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-
MW050	16/12/2014	Normal	ES1428296	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW050	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW050	22/03/2017	Normal	EB1705925	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW051	16/12/2014	Normal	ES1428296	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW051	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW051	29/03/2017	Normal	EB1706409	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW052	16/12/2014	Normal	ES1428296	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW052	2/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW053	28/01/2015	Normal	EB1511608	-	-	-	-	-	0.12	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW053	8/02/2016	Normal	EB1603686	-	-	-	-	-	0.27	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW053	8/02/2016	Field_D	EB1603686	-	-	-	-	-	0.29	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW053	8/02/2016	Interlab_D	489126	-	-	-	-	-	<0.04	-	-	-	-	-	-	<0.04	-	-	-	-	-	-	-	-	<0.2	<0.04	-	-	-	-	-	-	-	-	-	-	-
MW053	22/03/2017	Normal	EB1705923	-	0.18	0.15	1.17	0.04	0.47	-	<0.02	<0.1	0.12	<0.02	0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.64	2.2
MW054	28/01/2015	Normal	EB1511608	-	-	-	-	-	0.09	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW054	9/02/2016	Normal	EB1603686	-	-	-	-	-	0.13	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW054	22/03/2017	Normal	EB1705922	-	-	-	0.17	-	0.16	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.33	-
MW055	28/01/2015	Normal	EB1511608	-	-	-	-	-	0.98	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW055	28/01/2015	Field_D	EB1511608	-	-	-	-	-	1.61	-	-	-	-	-	-	0.07	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW055	28/01/2015	Interlab_D	446050	-	0.27	-	1.6	-	0.46	-	-	-	0.31	-	0.04	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.05	<0.01	-	<0.05	-	-	-	-	-	-	-	**2.06**	-
MW056	6/02/2015	Normal	EB1512362	-	-	-	-	-	0.15	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW056	6/02/2015	Field_D	EB1512362	-	-	-	-	-	0.18	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW056	6/02/2015	Interlab_D	446799	-	-	-	-	-	0.03	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW056	26/05/2016	Normal	EB1614021	-	-	-	-	-	0.07	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW056	25/08/2017	Normal	EB1717512	-	0.04	0.03	0.34	<0.02	0.08	-	<0.02	<0.1	0.04	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.42	0.57
MW056	17/10/2018	Normal	EB1826394	-	0.04	0.02	0.28	<0.02	0.06	-	<0.02	<0.1	0.04	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.34	0.45
MW056	9/04/2019	Normal	EB1909645	-	0.04	0.03	0.4	<0.02	0.07	-	<0.02	<0.1	0.06	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.47	0.63
MW056	23/10/2020	Normal	EB2027826	-	0.03	0.03	0.25	<0.02	0.06	-	<0.02	<0.1	0.05	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.31	0.45
MW056	13/04/2021	Normal	EB2110940	-	0.05	0.04	0.33	<0.02	0.12	-	<0.02	<0.1	0.07	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.45	0.66
MW057	6/02/2015	Normal	EB1512362	-	-	-	-	-	0.14	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW057	9/02/2016	Normal	EB1603686	-	-	-	-	-	0.1	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW057	22/03/2017	Normal	EB1705921	-	-	-	0.42	-	0.08	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.5	-
MW058	6/02/2015	Normal	EB1512362	-	-	-	-	-	0.1	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW058	5/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW058	24/03/2017	Normal	EB1705989	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW059	1/07/2015	Normal	EB1522109	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW059	13/07/2016	Normal	EB1618079	-	-	-	0.26	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	0.26	-
MW059	12/07/2017	Normal	EB1714300	-	0.15	0.16	0.37	<0.02	<0.01	-	<0.02	<0.1	0.06	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.37	0.74
MW060	1/07/2015	Normal	EB1522109	-	-	-	-	-	1.29	-	-	-	-	-	-	0.07	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW060	14/07/2016	Normal	EB1618082	-	-	-	0.87	-	1.45	-	-	-	-	-	-	0.12	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	**2.32**	-
MW061	27/08/2015	Normal	EB1527391	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW061	27/08/2015	Interlab_D	470480	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW061	27/08/2015	Field_D	EB1527391	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW061	13/07/2016	Normal	EB1618077	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	<0.02	-
MW061	19/10/2017	Normal	EB1721732	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW062	29/09/2015	Normal	EB1530552	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW062	29/09/2015	Field_D	EB1530552	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW062	29/09/2015	Interlab_D	474694	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW062	10/01/2017	Normal	EB1700654	-	-	-	0.06	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.06	-
MW063	12/10/2015	Normal	EB1531260	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW063	10/01/2017	Normal	EB1700645	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW063	17/03/2017	Normal	EB1705316	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW063	26/05/2017	Normal	EB1710855	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW063	19/10/2017	Normal	EB1721721	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW064	12/10/2015	Normal	EB1531260	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW064	10/01/2017	Normal	EB1700645	-	-	-	<0.02	-	0.02	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.02	-
MW064	17/03/2017	Normal	EB1705316	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW064	26/05/2017	Normal	EB1710855	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																		0.07	
PFAS NEMP 2020 Recreational Water													10																		2	

Location Code	Date	Sample Type	Lab Report																															
MW064	19/10/2017	Normal	EB1721721	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW065	12/10/2015	Normal	EB1531260	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW066	1/02/2016	Normal	EB1602999	-	-	-	-	-	0.17	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW066	1/02/2016	Field_D	EB1602999	-	-	-	-	-	0.18	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW066	1/02/2016	Interlab_D	488341	-	-	-	-	-	<0.04	-	-	-	-	-	0.04	-	-	-	-	-	-	-	-	<0.2	<0.04	-	-	-	-	-	-	-	-	-	-	-
MW066	23/03/2017	Normal	EB1705995	-	-	-	1.07	-	0.29	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	1.36	-
MW067	1/02/2016	Normal	EB1602999	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW068	16/03/2016	Normal	EB1607661	-	-	-	-	-	0.08	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW068	7/04/2017	Normal	EB1707207	-	<0.02	<0.02	0.12	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.23	0.25
MW069	16/03/2016	Normal	EB1607655	-	-	-	-	-	0.63	-	-	-	-	-	0.15	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW069	28/04/2017	Normal	EB1708636	-	0.76	0.48	5.33	0.17	0.68	-	<0.02	<0.1	0.07	0.08	<0.02	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.01**	7.67
MW070	16/03/2016	Normal	EB1607667	-	-	-	-	-	0.25	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW070	16/03/2016	Field_D	EB1607667	-	-	-	-	-	0.24	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW070	16/03/2016	Interlab_D	494201	-	-	-	-	-	0.46	-	-	-	-	-	0.04	-	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW070	4/04/2017	Normal	EB1707190	-	-	-	0.54	-	0.35	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.89	-
MW070	4/04/2017	Field_D	EB1707190	-	-	-	0.55	-	0.34	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.89	-
MW070	20/04/2017	Interlab_D	AECO06_170410	-	-	-	0.44	-	0.36	-	-	-	-	-	0.033	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.8	-
MW071	29/03/2016	Normal	EB1608597	-	-	-	-	-	0.96	-	-	-	-	-	0.18	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW071	29/03/2016	Field_D	EB1608597	-	-	-	-	-	1.11	-	-	-	-	-	0.14	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW071	29/03/2016	Interlab_D	495209	-	-	-	-	-	0.49	-	-	-	-	-	0.15	-	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW071	3/05/2017	Normal	EB1709206	-	0.34	0.28	1.26	0.1	1.58	-	<0.02	<0.1	0.03	<0.02	0.03	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.84**	3.76
MW072	12/04/2016	Normal	EB1609872	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW073	26/05/2016	Normal	EB1614013	-	-	-	-	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW074	26/05/2016	Normal	EB1614010	-	-	-	-	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW075	26/05/2016	Normal	EB1614011	-	-	-	-	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW076	26/05/2016	Normal	EB1614009	-	-	-	-	-	0.73	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW077	13/07/2016	Normal	EB1618091	-	-	-	4.36	-	5.63	-	-	-	-	-	0.33	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	**9.99**	-
MW077	12/07/2017	Normal	EB1714309	-	0.62	0.54	4.54	0.21	8.18	-	<0.02	0.3	0.79	0.14	0.16	0.28	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**12.7**	15.8
MW078	13/07/2016	Normal	EB1618084	-	-	-	0.82	-	1.08	-	-	-	-	-	0.09	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	1.9	-
MW079	13/07/2016	Normal	EB1618085	-	-	-	<0.02	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	<0.02	-
MW079	11/07/2017	Normal	EB1714329	-	<0.02	<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	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW080	19/09/2016	Normal	EB1623092	-	0.41	0.26	2.07	0.1	2.8	-	<0.02	<0.1	0.15	0.06	0.02	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.87**	5.96
MW080	19/09/2016	Field_D	EB1623092	-	0.39	0.26	2.22	0.12	3.22	-	<0.02	<0.1	0.13	0.05	0.02	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.44**	6.5
MW080	19/09/2016	Interlab_D	516989	-	0.24	-	1.7	-	4	-	<0.01	<0.1	0.19	0.05	0.05	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	**5.7**	-
MW080	18/10/2017	Normal	EB1721743	-	0.19	0.23	1.83	0.12	2.93	-	<0.02	<0.1	0.28	0.04	0.05	0.17	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.76**	5.84
MW081	19/09/2016	Normal	EB1623082	-	-	-	<0.02	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW081	19/10/2017	Normal	EB1721725	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW082	20/09/2016	Normal	EB1623087	-	0.16	0.06	0.32	<0.02	0.42	-	<0.02	<0.1	0.08	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.74	1.06
MW083	20/09/2016	Normal	EB1623074	-	0.36	0.33	2.55	0.12	3.14	-	<0.02	<0.1	0.3	<0.02	0.07	0.17	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.69**	7.04
MW083	17/10/2017	Normal	EB1721746	-	0.28	0.4	2.01	0.14	3.85	-	<0.02	<0.1	0.38	0.08	0.14	0.23	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.86**	7.51
MW083	17/10/2017	Field_D	EB1721746	-	0.2	0.27	1.54	0.1	2.83	-	<0.02	<0.1	0.26	0.05	0.09	0.17	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.37**	5.51
MW083	19/10/2017	Interlab_D	AECO06_171025_1	-	0.2	-	1.3	-	0.92	-	<0.02	0.068	0.35	0.07	0.045	0.069	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	-	-
MW084	20/09/2016	Normal	EB1623089	-	0.04	0.02	0.51	<0.02	0.41	-	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.92	1.01
MW084	18/10/2018	Normal	EB1826404	-	0.06	0.04	0.34	<0.02	0.12	-	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.46	0.59
MW084	11/04/2019	Normal	EB1909700	-	0.06	0.04	0.42	<0.02	0.11	-	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.53	0.66
MW084	11/04/2019	Field_D	EB1909687	-	0.06	0.03	0.41	<0.02	0.1	-	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.51	0.63
MW084	11/04/2019	Interlab_D	RN1230420	-	0.056	0.042	0.37	<0.01	0.13	<0.01	<0.01	<0.05	0.027	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.02	<0.05	-	-	-
MW084	24/10/2019	Normal	EB1928477	-	0.06	0.04	0.42	<0.02	0.13	-	<0.02	<0.1	0.04	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.55	0.7
MW084	26/03/2020	Normal	EB2008684	-	0.09	0.08	0.75	<0.02	0.19	-	<0.02	<0.1	0.06	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.94	1.18
MW085	20/09/2016	Normal	EB1623091	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW086	21/09/2016	Normal	EB1623077	-	0.29	0.22	1.97	0.09	1.39	-	<0.02	<0.1	0.25	<0.02	0.04	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.36**	4.32
MW086	17/10/2017	Normal	EB1721737	-	0.12	0.14	1.33	0.09	1.33	-	<0.02	<0.1	0.2	<0.02	0.03	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.66**	3.31
MW087	21/09/2016	Normal	EB1623076	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW087	19/10/2017	Normal	EB1721724	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW088	22/09/2016	Normal	EB1623094	-	0.06	0.03	0.27	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.32	0.41
MW088	17/10/2017	Normal	EB1721742	-	0.03	0.04	0.32	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.39	0.51
MW089	20/10/2016	Normal	EB1625189	-	-	-	0.45	-	0.75	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	1.2	-
MW089	18/10/2017	Normal	EB1721715	-	0.07	0.09	0.73	0.07	1.54	-	<0.02	<0.1	0.19	<0.02	0.03	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.27**	2.79
MW090	10/01/2017	Normal	EB1700652	-	-	-	4.2	-	4.29	-	-	-	-	-	0.34	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	**8.49**	-
MW090	19/10/2017	Normal	EB1721744	-	0.19	0.21	1.09	0.06	0.97	-	<0.02	<0.1	0.39	0.06	0.07	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.06**	3.13
MW090	19/10/2017	Field_D	EB1721744	-	0.3	0.4	2.15	0.14	4.04	-	<0.02	<0.1	0.36	0.07	0.1	0.22	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.19**	7.78
MW090	19/10/2017	Interlab_D	AECO06_171025	-	0.16	-	1.1	-	0.74	-	<0.02	0.059	0.3	0.062	0.037	0.06	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	-	-
MW091	11/01/2017	Interlab_D	530462	-	0.19	-	1.3	-	5.9	-	<0.01	0.09	0.47	0.07	0.05	0.18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	-	<0.05	-	-	<0.05	-	-	**7.2**	-
MW091	11/01/2017	Normal	EB1700646	-	-	-	1.56	-	6.62	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	**8.18**	-
MW091	11/01/2017	Field_D	EB1700646	-	-	-	1.71	-	7.88	-	-	-	-	-	-	0.21	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	**9.59**	-
MW091	18/10/2017	Normal	EB1721720	-	0.19	0.2	1.38	0.16	3.48	-	<0.02	<0.1	0.33	0.06	0.05	0.13	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.86**	5.98
MW091	19/04/2018	Normal	EB1809897	-	0.3	0.26	2.1	0.21	5.5	-	<0.02	0.1	0.47	0.1	0.08	0.17	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.6**	9.29
MW091	18/04/2019	Normal	EB1910274	-	0.24	0.26	1.89	0.17	4.48	-	<0.02	<0.1	0.44	0.08	0.07	0.16	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.37**	7.79
MW092	10/03/2017	Normal	EB1704805	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW092	10/03/2017	Field_D	EB1704805	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW092	10/03/2017	Interlab_D	AECO06_170314_2	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW093	10/03/2017	Normal	EB1704806	-	-	-	0.04	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	0.04	-
MW094	21/03/2017	Normal	EB1705911	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW094	21/03/2017	Field_D	EB1705911	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids												PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																			0.07	
PFAS NEMP 2020 Recreational Water													**10**																			**2**	

Location Code	Date	Sample Type	Lab Report																																	
MW094	21/03/2017	Interlab_D	AECO06_170328_1	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.02	-
MW095	7/04/2017	Normal	EB1707234	-	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.07
MW096	18/05/2017	Normal	EB1710281	-	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.03
MW097	11/07/2017	Normal	EB1714323	-	0.55	0.49	2.61	0.14	2.47	-	<0.02	<0.1	0.74	0.13	0.14	0.23	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.08**	7.5
MW097	22/11/2018	Normal	EB1828775	-	0.07	0.06	0.37	0.02	0.3	-	<0.02	<0.1	0.11	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.67	0.98
MW098	17/10/2017	Normal	EB1721740	-	0.08	0.04	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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.1	0.25
MW099	28/02/2018	Normal	EB1805779	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW100	6/08/2018	Normal	EB1819012	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW100	6/08/2018	Field_D	EB1819012	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW100	6/08/2018	Interlab_D	AECO06_180809	-	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW100	17/04/2019	Normal	EB1910278	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW100	22/05/2020	Normal	EB2013707	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW100	22/05/2020	Field_D	EB2013707	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW101	5/09/2017	Normal	EB1718322	-	0.24	0.11	0.8	0.02	0.38	-	<0.02	<0.1	0.37	0.12	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.18	2.1
MW101	15/11/2017	Normal	EB1724162	-	0.16	0.18	0.83	<0.02	0.26	-	<0.02	<0.1	0.32	0.06	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.09	1.81
MW101	23/11/2017	Normal	EB1724901	-	0.15	0.11	0.64	0.03	0.34	-	<0.02	<0.1	0.19	0.06	0.03	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.98	1.58
MW102	4/07/2017	Normal	EB1716986	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW102	5/09/2017	Normal	EB1718322	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW103	16/08/2017	Normal	EB1716972	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW103	29/08/2017	Normal	EB1717689	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW104	15/08/2017	Normal	EB1716714	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW104	17/08/2017	Normal	EB1716972	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW104	29/08/2017	Normal	EB1717689	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW105	10/08/2017	Normal	EB1716552	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW105	29/08/2017	Normal	EB1717689	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW106	26/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW106	8/02/2016	Normal	EB1603686	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW106	29/03/2017	Normal	EB1706420	-	-	-	0.23	-	0.18	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	0.41	-
MW106	17/10/2018	Normal	EB1826398	-	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW106	17/04/2019	Normal	EB1910281	-	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.17	0.17
MW107	26/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW107	8/02/2016	Normal	EB1603686	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW107	29/03/2017	Normal	EB1706420	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW107	19/04/2018	Normal	EB1809891	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW107	17/10/2018	Normal	EB1826398	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW107	17/04/2019	Normal	EB1910281	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW108	29/11/2013	Normal	EB1329481	-	-	-	-	-	0.29	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	0.8	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW108	30/01/2014	Normal	EB1402209	-	-	-	-	-	0.54	-	-	-	-	-	-	0.03	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW108	26/05/2014	Normal	EB1412900	-	-	-	-	-	0.25	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW108	8/02/2016	Normal	EB1603686	-	-	-	-	-	0.79	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW108	29/03/2017	Normal	EB1706420	-	-	-	1.04	-	0.82	-	-	-	-	-	-	0.05	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	1.86	-
MW108	17/10/2018	Normal	EB1826398	-	0.09	0.07	0.52	0.03	0.42	-	<0.02	<0.1	0.12	0.03	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.94	1.31
MW108	17/04/2019	Normal	EB1910281	-	0.08	0.1	0.73	0.03	0.73	-	<0.02	<0.1	0.16	0.02	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.46	1.91
MW109	29/11/2013	Normal	EB1329481	-	-	-	-	-	1.6	-	-	-	-	-	-	0.09	-	-	-	-	-	-	-	0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW109	29/11/2013	Field_D	EB1329481	-	-	-	-	-	1.49	-	-	-	-	-	-	0.09	-	-	-	-	-	-	-	0.3	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW109	29/11/2013	Interlab_D	402028	-	-	-	-	-	1.3	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW109	30/01/2014	Normal	EB1402209	-	-	-	-	-	2.25	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW109	26/05/2014	Normal	EB1412900	-	-	-	-	-	1	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW109	8/02/2016	Normal	EB1603686	-	-	-	-	-	1.61	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW109	29/03/2017	Normal	EB1706420	-	-	-	1.47	-	1.16	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	**2.63**	-
MW110	28/10/2014	Normal	EB1445390	-	-	-	-	-	4.51	-	-	-	-	-	-	0.17	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW111	23/08/2017	Normal	EB1717729	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW112	29/01/2014	Normal	EB1402209	-	-	-	-	-	8.65	-	-	-	-	-	-	0.44	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW112	22/05/2014	Normal	EB1412441	-	-	-	-	-	1.48	-	-	-	-	-	-	0.25	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW112	10/02/2016	Normal	EB1603686	-	-	-	-	-	1.84	-	-	-	-	-	-	0.19	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW112	23/03/2017	Field_D	EB1705972	-	-	-	1.55	-	1.69	-	-	-	-	-	-	0.16	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	**3.24**	-
MW112	23/03/2017	Interlab_D	AECO06_170329	-	-	-	0.91	-	1.2	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	**2.11**	-
MW112	23/03/2017	Normal	EB1705972	-	-	-	1.5	-	1.63	-	-	-	-	-	-	0.16	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	**3.13**	-
MW112	28/02/2018	Field_D	EB1805777	-	0.21	0.19	1.19	0.08	1.52	-	<0.02	<0.1	0.47	0.12	0.08	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.71**	3.96
MW112	28/02/2018	Interlab_D	AECO06_180306_1	-	0.18	0.15	1.1	0.054	1.6	<0.01	<0.01	0.083	0.37	0.09	0.059	0.11	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW112	28/02/2018	Normal	EB1805777	-	0.2	0.18	1.23	0.08	1.64	-	<0.02	<0.1	0.47	0.11	0.08	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.87**	4.1
MW113	30/01/2014	Normal	EB1402209	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW113	22/05/2014	Normal	EB1412441	-	-	-	-	-	0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW113	5/02/2016	Normal	EB1603065	-	-	-	-	-	0.08	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW113	24/03/2017	Normal	EB1705988	-	-	-	0.23	-	0.07	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	0.3	-
MW113	11/04/2019	Field_D	EB1909687	-	0.03	0.02	0.2	<0.02	0.09	-	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.29	0.39
MW113	11/04/2019	Interlab_D	RN1230420	-	0.029	0.03	0.17	<0.01	0.11	<0.01	<0.01	<0.05	0.042	<0.02	<0.01	0.013	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.02	<0.05	-	-	-
MW113	11/04/2019	Normal	EB1909695	-	0.02	0.03	0.2	<0.02	0.08	-	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.28	0.38
MW113	27/03/2020	Normal	EB2009337	-	0.06	0.06	0.34	0.02	0.26	-	<0.02	<0.1	0.07	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.6	0.82
MW113	22/05/2020	Normal	EB2013711	-	0.06	0.04	0.31	0.02	0.2	-	<0.02	<0.1	0.06	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.51	0.74
MW113	15/04/2021	Normal	EB2110946	-	<0.10	0.05	0.3	<0.02	0.15	-	<0.02	<0.1	0.06	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.45	0.57
MW114	31/01/2014	Normal	EB1402209	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW114	23/05/2014	Normal	EB1412619	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW114	16/03/2016	Normal	EB1607673	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																		0.07	
PFAS NEMP 2020 Recreational Water													**10**																		**2**	

Location Code	Date	Sample Type	Lab Report																															
MW114	6/04/2017	Normal	EB1707195	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	<0.02	-
MW114	18/04/2018	Normal	EB1809895	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW114	11/04/2019	Normal	EB1909709	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW114	27/03/2020	Normal	EB2009343	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW114	28/04/2021	Normal	EB2111764	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW115	26/05/2014	Normal	EB1412900	-	-	-	-	-	0.27	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW115	8/02/2016	Normal	EB1603686	-	-	-	-	-	0.6	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW116	17/11/2014	Normal	EB1446505	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW116	3/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW116	23/03/2017	Normal	EB1705976	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW117	26/05/2014	Normal	EB1412900	-	-	-	-	-	0.14	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW117	8/02/2016	Normal	EB1603686	-	-	-	-	-	0.63	-	-	-	-	-	0.04	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW117	29/03/2017	Normal	EB1706413	-	-	-	1.52	-	0.76	-	-	-	-	-	0.04	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	**2.28**	-
MW118	31/01/2014	Normal	EB1402209	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW118	5/06/2014	Normal	EB1413760	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW118	16/03/2016	Normal	EB1607673	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW118	6/04/2017	Normal	EB1707195	-	-	-	<0.02	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW118	18/04/2018	Normal	EB1809895	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW118	11/04/2019	Normal	EB1909709	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW118	27/03/2020	Normal	EB2009343	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW118	28/04/2021	Normal	EB2111764	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW119	6/06/2014	Normal	EB1413760	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW119	19/10/2016	Normal	EB1625289	-	-	-	<0.02	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW119	16/04/2019	Normal	EB1910256	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW120	27/05/2014	Normal	EB1412900	-	-	-	-	-	0.2	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW120	16/03/2016	Normal	EB1607653	-	-	-	-	-	1.27	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW120	7/04/2017	Normal	EB1707196	-	-	-	0.49	-	1.11	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	1.6	-
MW121	21/05/2014	Normal	EB1412441	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW122	31/01/2014	Normal	EB1402209	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW122	23/05/2014	Normal	EB1412619	-	-	-	-	-	0.03	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW122	16/03/2016	Normal	EB1607673	-	-	-	-	-	0.03	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW122	6/04/2017	Normal	EB1707195	-	-	-	0.26	-	0.22	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	0.48	-
MW122	18/04/2018	Normal	EB1809895	-	0.14	0.12	0.8	0.04	0.77	-	<0.02	<0.1	0.18	0.06	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.57	2.18
MW122	11/04/2019	Normal	EB1909709	-	0.08	0.08	0.53	<0.02	0.35	-	<0.02	<0.1	0.11	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.88	1.2
MW122	27/03/2020	Normal	EB2009343	-	0.16	0.18	1.61	0.14	1.69	-	<0.02	<0.10	0.29	0.08	0.06	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.3**	4.31
MW122	28/04/2021	Normal	EB2111764	-	0.17	0.18	1.02	0.06	1.04	-	<0.02	<0.1	0.3	0.08	0.05	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.06**	2.96
MW123	30/01/2014	Normal	EB1402209	-	-	-	-	-	0.16	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW123	22/05/2014	Normal	EB1412441	-	-	-	-	-	0.12	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW123	5/02/2016	Normal	EB1603065	-	-	-	-	-	0.19	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW123	24/03/2017	Normal	EB1705986	-	-	-	0.46	-	0.14	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	0.6	-
MW124	29/01/2014	Normal	EB1402209	-	-	-	-	-	2.6	-	-	-	-	-	0.09	-	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW124	22/05/2014	Normal	EB1412441	-	-	-	-	-	0.64	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW124	19/10/2016	Normal	EB1625215	-	-	-	2.7	-	1.87	-	-	-	-	-	0.18	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	**4.57**	-
MW124	14/04/2021	Normal	EB2110564	-	0.68	0.6	3.18	0.14	1.99	-	<0.02	0.2	1.12	0.31	0.13	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.17**	8.55
MW125	29/10/2014	Normal	EB1445390	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW125	8/02/2016	Normal	EB1603686	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW125	22/03/2017	Normal	EB1705920	-	-	-	<0.02	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW126	29/01/2014	Field_D	EB1402209	-	-	-	-	-	8.6	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW126	29/01/2014	Interlab_D	407332	-	-	-	-	-	0.2	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW126	29/01/2014	Normal	EB1402209	-	-	-	-	-	6.26	-	-	-	-	-	0.16	-	-	-	-	-	-	-	-	0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW126	22/05/2014	Field_D	EB1412441	-	-	-	-	-	1.66	-	-	-	-	-	0.12	-	-	-	-	-	-	-	-	0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW126	22/05/2014	Interlab_D	419530	-	-	-	-	-	0.98	-	-	-	-	-	0.17	-	-	-	-	-	-	-	-	0.27	0.02	-	-	-	-	-	-	-	-	-	-	-	-
MW126	22/05/2014	Normal	EB1412441	-	-	-	-	-	1.88	-	-	-	-	-	0.15	-	-	-	-	-	-	-	-	0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW126	19/10/2016	Field_D	EB1625215	-	-	-	3.47	-	3.63	-	-	-	-	-	0.22	-	-	-	-	-	-	-	-	0.11	-	-	-	-	-	-	-	-	-	-	-	**7.1**	-
MW126	19/10/2016	Normal	EB1625215	-	-	-	3.53	-	3.56	-	-	-	-	-	0.22	-	-	-	-	-	-	-	-	0.14	-	-	-	-	-	-	-	-	-	-	-	**7.09**	-
MW126	19/10/2016	Interlab_D	520881	-	-	-	2.7	-	4.4	-	-	-	-	-	0.12	-	-	-	-	-	-	-	-	0.09	-	-	-	-	-	-	-	-	-	-	-	**7.1**	-
MW127	28/10/2014	Normal	EB1445390	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW127	27/05/2016	Normal	EB1614019	-	-	-	-	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-
MW127	12/07/2017	Normal	EB1714305	-	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW128	30/01/2014	Normal	EB1402209	-	-	-	-	-	0.03	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW128	22/05/2014	Normal	EB1412441	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW128	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW128	22/03/2017	Normal	EB1705924	-	-	-	<0.02	-	0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	0.01	-
MW129	30/01/2014	Normal	EB1402209	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW129	22/05/2014	Normal	EB1412441	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW129	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW129	23/03/2017	Normal	EB1705983	-	-	-	0.02	-	0.02	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	0.04	-
MW130	17/11/2014	Normal	EB1446505	-	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW130	2/02/2016	Normal	EB1603065	-	-	-	-	-	0.06	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW130	22/03/2017	Normal	EB1705932	-	-	-	0.07	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	0.07	-
MW132	30/01/2014	Normal	EB1402209	-	-	-	-	-	8.47	-	-	-	-	-	0.88	-	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
MW132	22/05/2014	Normal	EB1412441	-	-	-	-	-	4.65	-	-	-	-	-	0.62	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW132	16/03/2016	Field_D	EB1607669	-	-	-	-	-	6.04	-	-	-	-	-	0.78	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
MW132	16/03/2016	Interlab_D	494199	-	-	-	-	-	8	-	-	-	-	-	0.88	-	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-	-

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids												PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																			0.07	
PFAS NEMP 2020 Recreational Water													**10**																			**2**	

Location Code	Date	Sample Type	Lab Report																																
MW132	16/03/2016	Normal	EB1607669	-	1.7	-	14.2	-	5.97	-	<0.02	-	2.88	-	0.29	0.8	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**20.17**	-
MW132	2/05/2017	Normal	EB1709215	-	2.17	2.44	15.2	0.81	11	-	<0.02	0.7	3.04	0.58	0.69	1.32	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**26.2**	38
MW132	18/04/2018	Normal	EB1809901	-	1.71	1.6	17	0.66	9.82	-	<0.02	0.5	2.92	0.64	0.49	0.82	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**26.8**	36.2
MW132	17/04/2019	Normal	EB1910271	-	0.72	0.74	5.36	0.3	4.61	-	<0.02	0.1	1.35	0.27	0.19	0.4	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**9.97**	14
MW132	27/03/2020	Normal	EB2009339	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW132	19/04/2021	Normal	EB2110957	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW133	30/01/2014	Normal	EB1402209	-	-	-	-	-	1.55	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-
MW133	23/05/2014	Normal	EB1412619	-	-	-	-	-	1	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW133	16/03/2016	Field_D	EB1607670	-	-	-	-	-	0.8	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW133	16/03/2016	Interlab_D	494200	-	-	-	-	-	1.3	-	-	-	-	-	-	0.03	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW133	16/03/2016	Normal	EB1607670	-	-	-	-	-	0.92	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW133	12/07/2017	Field_D	EB1714319	-	0.07	0.08	0.75	0.05	1.24	-	<0.02	<0.1	0.09	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.99	2.32
MW133	12/07/2017	Interlab_D	AECO06/170719	-	0.057	-	0.64	-	0.85	-	<0.02	<0.05	0.093	<0.02	0.012	0.027	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	-	-
MW133	12/07/2017	Normal	EB1714319	-	0.07	0.08	0.72	0.05	1.2	-	<0.02	<0.1	0.09	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.92	2.25
MW134	27/05/2014	Field_D	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW134	27/05/2014	Interlab_D	420320	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW134	27/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW134	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW134	10/03/2017	Normal	EB1704807	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW134	18/10/2018	Normal	EB1826390	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW134	16/04/2019	Normal	EB1910263	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW134	24/10/2019	Normal	EB1928478	-	<0.02	<0.02	0.08	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.12	0.12
MW134	16/01/2020	Normal	EB2001202	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.12	0.12
MW134	16/01/2020	Field_D	EB2001202	-	<0.02	<0.02	0.06	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.11	0.11
MW134	16/01/2020	Interlab_D	RN1311048	-	0.014	0.012	0.083	<0.01	0.073	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW134	26/03/2020	Normal	EB2008685	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.09	0.09
MW134	21/10/2020	Normal	EB2027842	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.09	0.09
MW134	19/04/2021	Normal	EB2112336	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW135	17/11/2014	Normal	EB1446505	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW135	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW135	1/06/2017	Normal	EB1711296	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW135	1/06/2017	Normal	EB1711987	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	0.3	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.29
MW135	5/07/2017	Normal	EB1713891	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW138	30/01/2014	Normal	EB1402209	-	-	-	-	-	0.08	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-
MW138	26/05/2014	Normal	EB1412900	-	-	-	-	-	0.05	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW138	26/05/2016	Normal	EB1614020	-	-	-	-	-	0.06	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW138	12/07/2017	Normal	EB1714307	-	0.05	0.06	0.3	<0.02	0.08	-	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.38	0.54
MW138	11/04/2019	Normal	EB1909693	-	0.05	0.05	0.37	<0.02	0.08	-	<0.02	<0.1	0.06	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.45	0.61
MW139	31/01/2014	Normal	EB1402209	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-
MW139	22/05/2014	Normal	EB1412441	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW140	17/11/2014	Normal	EB1446505	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW140	4/02/2016	Field_D	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW140	4/02/2016	Interlab_D	488333	-	-	-	-	-	<0.04	-	-	-	-	-	-	<0.04	-	-	-	-	-	-	-	<0.2	<0.04	-	-	-	-	-	-	-	-	-	-	-
MW140	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW140	1/06/2017	Normal	EB1711292	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW140	1/06/2017	Normal	EB1711987	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	0.1	0.09	0.15	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.36
MW140	3/07/2017	Normal	EB1713892	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW141	28/08/2017	Normal	EB1717729	-	0.06	0.08	0.7	0.03	1.03	-	<0.02	<0.1	0.14	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.73	2.08
MW141	12/09/2017	Normal	EB1718836	-	0.51	0.52	2.71	0.29	6.89	-	<0.02	<0.1	1.57	0.46	0.46	0.79	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	<0.05	0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**9.6**	14.3
MW142	28/10/2014	Normal	EB1445390	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW142	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW142	23/03/2017	Normal	EB1705974	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW142	16/04/2019	Normal	EB1910266	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW143	1/07/2015	Field_D	EB1522109	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW143	1/07/2015	Interlab_D	464084	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW143	1/07/2015	Normal	EB1522109	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW143	14/07/2016	Normal	EB1618081	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	<0.02	-
MW144	28/10/2014	Field_D	EB1445390	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW144	28/10/2014	Interlab_D	437530	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW144	28/10/2014	Normal	EB1445390	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW144	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW144	23/03/2017	Normal	EB1705917	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW145	27/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW145	3/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW145	23/03/2017	Normal	EB1705999	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	<0.02	-
MW146	28/10/2014	Normal	EB1445390	-	-	-	-	-	0.07	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW146	8/02/2016	Normal	EB1603686	-	-	-	-	-	0.22	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW147	26/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	0.2	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW147	27/05/2016	Normal	EB1614014	-	-	-	-	-	<0.01	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW147	12/07/2017	Normal	EB1714306	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW147	18/04/2018	Normal	EB1809900	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.02
MW147	22/11/2018	Normal	EB1828774	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW147	17/04/2019	Normal	EB1910269	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW147	24/10/2019	Normal	EB1928470	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																			0.07	
PFAS NEMP 2020 Recreational Water													**10**																			**2**	

Location Code	Date	Sample Type	Lab Report																																
MW147	27/03/2020	Normal	EB2009336	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW147	21/10/2020	Normal	EB2027841	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW147	13/04/2021	Normal	EB2110938	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW148	26/05/2014	Normal	EB1412900	-	-	-	-	-	0.04	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW148	8/02/2016	Normal	EB1603686	-	-	-	-	-	0.19	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW148	29/03/2017	Normal	EB1706413	-	-	-	0.49	-	0.31	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	0.8	-
MW149	21/05/2014	Normal	EB1412441	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW149	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW149	23/03/2017	Normal	EB1705919	-	-	-	<0.02	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	<0.02	-
MW149	18/04/2018	Normal	EB1809898	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW149	17/04/2019	Normal	EB1910272	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW149	30/03/2020	Normal	EB2009345	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW149	19/04/2021	Normal	EB2110952	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW150	22/05/2014	Normal	EB1412441	-	-	-	-	-	2.53	-	-	-	-	-	-	0.23	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW150	5/02/2016	Normal	EB1603065	-	0.49	-	2.52	-	3.27	-	<0.02	-	0.58	-	0.2	0.26	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	5.79	-
MW150	29/03/2017	Normal	EB1706406	-	-	-	2.46	-	3.9	-	-	-	-	-	-	0.27	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	6.36	-
MW151	23/05/2014	Normal	EB1412619	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW151	18/10/2018	Normal	EB1826397	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW151	17/04/2019	Normal	EB1910267	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW151	24/10/2019	Normal	EB1928473	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW151	27/03/2020	Normal	EB2009335	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW151	21/10/2020	Normal	EB2027840	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW151	13/04/2021	Normal	EB2110934	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW152	29/10/2014	Normal	EB1445390	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW153	17/11/2014	Normal	EB1446505	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW153	3/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW153	2/05/2017	Normal	EB1709199	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW154	28/10/2014	Normal	EB1445390	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW154	27/05/2016	Normal	EB1614018	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-
MW154	2/05/2017	Normal	EB1709214	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW155	29/10/2014	Normal	EB1445390	-	-	-	-	-	0.29	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW155	5/02/2016	Normal	EB1603065	-	-	-	-	-	1.34	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW155	1/06/2017	Normal	EB1711294	-	<0.02	<0.02	0.11	<0.02	0.29	-	<0.02	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.4	0.4
MW155	1/06/2017	Normal	EB1711987	-	<0.02	<0.02	0.04	<0.02	0.38	-	<0.02	0.3	0.15	0.08	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.43	0.94
MW155	6/07/2017	Normal	EB1713890	-	0.02	<0.02	0.13	<0.02	0.42	-	<0.02	<0.1	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.55	0.61
MW156	30/01/2014	Normal	EB1402209	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-
MW156	23/05/2014	Normal	EB1412619	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW156	4/02/2016	Normal	EB1603065	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW156	23/03/2017	Normal	EB1705997	-	-	-	0.04	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	0.04	-
MW157	31/01/2014	Normal	EB1402209	-	-	-	-	-	9.49	-	-	-	-	-	-	0.22	-	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-
MW157	23/05/2014	Field_D	EB1412619	-	-	-	-	-	6.77	-	-	-	-	-	-	0.25	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW157	23/05/2014	Normal	EB1412619	-	-	-	-	-	7.21	-	-	-	-	-	-	0.24	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW157	16/03/2016	Normal	EB1607673	-	0.57	-	4.54	-	7.06	-	<0.02	-	0.65	-	0.09	0.18	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	11.6	-
MW157	6/04/2017	Normal	EB1707195	-	-	-	4.77	-	9.72	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	14.49	-
MW157	11/04/2019	Normal	EB1909709	-	0.59	0.56	3.9	0.35	5.71	-	<0.02	0.1	0.79	0.19	0.13	0.24	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	9.61	12.6
MW157	26/03/2020	Normal	EB2008690	-	0.65	0.6	3.88	0.44	7.4	-	<0.04	<0.2	0.87	0.2	0.14	0.28	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	-	11.3	14.5
MW157	28/04/2021	Normal	EB2111764	-	0.56	0.56	3.39	0.37	7.68	-	<0.02	0.1	0.86	0.19	0.14	0.25	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	11.1	14.1
MW158	27/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW159	29/01/2014	Normal	EB1402209	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-
MW159	23/05/2014	Normal	EB1412619	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW160	26/05/2014	Normal	EB1412900	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW160	8/05/2019	Normal	EB1911741	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW161	28/08/2017	Normal	EB1717729	-	0.03	0.03	0.15	<0.02	0.04	-	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.19	0.3
MW166	15/08/2017	Normal	EB1716714	-	0.08	0.1	0.39	<0.02	0.19	-	<0.02	0.1	0.16	0.05	0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.63	1.05
MW166	15/08/2017	Normal	EB1716714	-	0.1	0.11	0.59	-	0.24	-	-	-	0.31	0.06	-	-	-	-	-	-	-	-	-	0.15	-	-	-	-	-	-	-	-	-	-	0.78	1.69
MW167	10/03/2017	Normal	EB1705014	-	1.15	1.2	5.67	0.66	14.8	-	<0.02	<0.1	2.2	0.37	0.37	1.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	20.47	27.5
MW167	10/03/2017	Normal	EB1705014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.5	-
MW167	22/03/2017	Normal	ES1709078	-	0.15	0.75	3.79	0.46	10.2	-	0.008	0.28	5.93	1.88	0.28	0.58	<0.002	<0.002	0.004	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	-	13.99	24.3
MW167	22/03/2017	Normal	ES1709078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-
MW167	26/04/2018	Normal	EB1810408	-	1	0.72	4.05	0.42	12	-	<0.02	0.3	1.68	0.39	0.28	0.51	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	16	21.4
MW167	21/06/2018	Normal	B683485-A	-	0.88	0.7	4	0.57	7.4	<0.01	<0.01	0.29	1.6	0.4	0.32	0.85	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	0.032	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	11.35	16.98
MW167	21/06/2018	Normal	B683485-B	-	1.2	0.96	5.2	0.61	7.6	<0.05	<0.05	<2.5	6.7	3.2	0.4	0.97	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	12.89	26.9
MW167	22/10/2018	Normal	EB1825962	-	0.86	0.87	4.48	0.43	9.4	-	<0.02	0.3	1.75	0.37	0.29	0.55	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	13.9	19.3
MW167	16/04/2019	Normal	EB1910095	-	0.78	0.71	3.81	0.35	7.97	-	<0.02	0.2	1.66	0.34	0.25	0.47	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	11.8	16.5
MW167	16/04/2019	Field_D	EB1910095	-	0.78	0.72	3.81	0.35	7.6	-	<0.02	0.3	1.62	0.33	0.26	0.47	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	11.4	16.2
MW167	16/04/2019	Interlab_D	RN1231103	-	0.73	0.56	3.3	0.29	7.6	<0.01	<0.01	0.32	1.3	0.24	0.22	0.37	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.029	<0.01	<0.01	0.015	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW167	23/05/2019	Normal	657987	0.32	0.77	0.92	3.4	0.31	9.3	<0.01	<0.01	0.26	1.7	0.4	0.28	0.59	<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	<0.05	-	12.7	18.25
MW167	10/07/2019	Normal	EB1918202	-	0.676	0.708	3.11	0.503	10.2	-	0.0208	0.063	1.21	0.262	0.205	0.412	0.0008	<0.0005	0.0033	<0.0005	<0.0005	0.0007	<0.001	0.018	0.002	<0.001	0.0165	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	13.3	17.4
MW167	21/10/2019	Normal	EB1928436	-	0.76	0.69	3.67	0.31	6.86	-	<0.02	0.2	1.54	0.32	0.25	0.43	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	10.5	15
MW167	30/10/2019	Normal	EB1928975	-	0.857	0.614	3.61	0.44	9.06	-	0.0295	0.138	1.57	0.322	0.209	0.473	0.0007	<0.0005	0.0035	<0.0005	<0.0005	<0.0005	<0.001	0.019	0.002	<0.001	0.0139	<0.001	<0.0005	<0.001	<0.001	0.0007	<0.001	-	12.7	17.4
MW167	5/03/2020	Normal	EB2006415	-	0.928	0.878	3.4	0.45	8.69	-	<0.0016	0.074	1.36	0.334	0.268	0.557	<0.0016	<0.0016	0.0046	<0.0040	<0.0016	<0.0016	<0.002	0.017	<0.002	<0.002	0.0234	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	12.1	17
MW167	25/03/2020	Normal	EB2008691	-	1.05	0.8	4.34	0.48	9.18	-	<0.09	<0.4	1.36	0.29	0.24	0.46	<0.09	<0.09	<0.09	<0.23	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.23	<0.09	<0.23	<0.23	<0.09	<0.23	-	13.5	18.2
MW167	19/10/2020	Normal	EB2027817	-	0.85	0.7	3.68	0.38	8.45	-	<0.02	0.28	1.74	0.4	0.28	0.52	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	12.1	17.3
MW167	17/04/2021	Normal	EB2110967	-	0.62	0.54	2.73	0.26	5.5	-	<0.02	0.22	1.22	0.29	0.22	0.36	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	8.23	12

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																			0.07	
PFAS NEMP 2020 Recreational Water													**10**																			**2**	

Location Code	Date	Sample Type	Lab Report																																
MW168	29/01/2014	Normal	EB1402209	-	-	-	-	-	6.18	-	-	-	-	-	-	0.16	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-
MW168	29/01/2014	Field_D	EB1402209	-	-	-	-	-	5.45	-	-	-	-	-	-	0.13	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-
MW168	29/01/2014	Interlab_D	407332	-	-	-	-	-	2	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW168	21/05/2014	Normal	EB1412441	-	-	-	-	-	1.66	-	-	-	-	-	-	0.09	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW168	29/10/2014	Normal	EB1445390	-	-	-	-	-	1.72	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW168	14/04/2021	Normal	EB2110564	-	0.3	0.27	1.54	0.11	1.73	-	<0.02	<0.1	0.54	0.13	0.07	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.27**	4.83
MW169	10/03/2017	Normal	EB1705014	-	0.1	0.1	0.6	<0.02	0.04	-	<0.02	<0.1	0.22	0.09	0.05	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.64	1.23
MW169	23/05/2019	Normal	657987	0.21	0.29	0.32	2.3	0.16	3.4	<0.01	<0.01	0.38	1.4	1	0.71	0.86	0.02	<0.01	0.16	<0.01	<0.01	<0.01	<0.01	1.1	0.12	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	**5.7**	12.43
MW170	10/03/2017	Normal	EB1705014	-	0.71	0.8	4.05	0.21	3.34	-	<0.02	<0.1	1.34	0.23	0.24	0.43	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.39**	11.4
MW170	23/05/2019	Normal	657987	0.17	0.47	0.45	3	0.11	3.5	<0.01	<0.01	0.24	1.3	0.67	0.31	0.41	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	0.29	0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	**6.5**	11
MW171	29/01/2014	Normal	EB1402209	-	-	-	-	-	3.17	-	-	-	-	-	-	0.14	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-
MW171	23/05/2014	Normal	EB1412619	-	-	-	-	-	1.64	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW171	10/03/2017	Interlab_D	AECO06_170316	-	0.34	-	1.9	-	1.7	-	<0.02	0.094	0.45	0.14	0.079	0.11	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	**3.6**	-
MW171	10/03/2017	Normal	EB1705014	-	0.46	0.5	3.09	0.08	2.6	-	<0.02	<0.1	0.82	0.14	0.09	0.25	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.69**	8.03
MW171	10/03/2017	Field_D	EB1705014	-	0.49	0.54	3.34	0.15	2.84	-	<0.02	<0.1	0.86	0.15	0.12	0.24	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.18**	8.73
MW172	10/03/2017	Normal	EB1705014	-	0.27	0.31	2.18	0.16	4.92	-	<0.02	<0.1	1.49	1.4	1.15	1.14	0.22	<0.02	0.27	<0.05	<0.02	<0.02	<0.05	5.78	3.96	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.1**	23.2
MW172	19/04/2018	Normal	EB1809957	-	0.52	0.5	3.13	0.16	3.15	-	<0.02	0.1	0.8	0.2	0.11	0.18	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.28**	8.85
MW172	19/04/2018	Field_D	EB1809957	-	0.57	0.49	3.04	0.13	3.05	-	<0.02	0.1	0.78	0.2	0.11	0.16	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.09**	8.63
MW172	19/04/2018	Interlab_D	AECO06_180424	-	0.38	0.32	2.5	0.089	2.4	<0.01	<0.01	0.12	0.64	0.17	0.082	0.12	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.039	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW172	24/10/2018	Normal	EB1825962	-	1.17	1.18	5.5	0.7	25	-	<0.02	0.6	2.57	1.23	1.3	1.55	0.2	<0.02	0.17	<0.05	<0.02	0.02	<0.05	0.9	2.1	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**30.5**	44.2
MW172	5/04/2019	Normal	EB1908876	-	0.42	0.43	4.12	0.24	3.16	-	<0.02	0.5	1.83	1.56	0.82	0.82	0.03	<0.02	0.19	<0.05	<0.02	<0.02	<0.05	1.16	0.12	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.28**	15.4
MW172	23/10/2019	Normal	EB1928436	-	0.42	0.4	2.18	0.16	5.34	-	<0.02	0.5	1.6	1.47	1.1	0.84	0.08	<0.02	0.15	<0.05	<0.02	<0.02	<0.05	1	1.49	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.52**	16.7
MW172	30/03/2020	Normal	EB2009332	-	0.48	0.46	2.38	0.24	6.12	-	<0.02	0.9	1.83	2.21	1.65	1.15	0.15	<0.02	0.24	<0.05	<0.02	0.02	<0.05	1.65	2.48	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**8.5**	22
MW172	20/10/2020	Normal	EB2027817	-	0.33	0.34	2.05	0.15	3.96	-	<0.02	0.5	1.36	1.47	1.09	0.64	0.07	<0.02	0.14	<0.05	<0.02	<0.02	<0.05	0.86	1.42	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.01**	14.4
MW172	14/04/2021	Normal	EB2110967	-	0.3	0.3	1.71	0.09	3.63	-	<0.02	0.6	1.18	1.83	1.42	0.59	0.08	<0.02	0.14	<0.05	<0.02	<0.02	<0.05	0.89	1.53	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.34**	14.3
MW172	14/04/2021	Field_D	EB2110967	-	0.45	0.33	1.77	0.1	2.79	-	<0.02	0.56	1.37	2.02	1.54	0.72	0.07	<0.02	0.13	<0.05	<0.02	<0.02	<0.05	0.86	0.86	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.56**	13.6
MW172	14/04/2021	Interlab_D	RN1312932	-	0.32	0.27	1.6	0.076	2.6	<0.01	<0.01	0.54	1.1	1.6	1.3	0.56	0.046	<0.01	0.12	<0.02	<0.02	<0.01	<0.01	0.82	0.94	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW173	10/03/2017	Normal	EB1705014	-	0.62	0.67	5	0.22	1.59	-	<0.02	<0.1	2.42	1.47	1	1.23	<0.02	<0.02	0.08	<0.05	<0.02	<0.02	<0.05	3.64	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.59**	17.9
MW173	25/10/2018	Normal	EB1825962	-	0.32	0.33	2.98	0.19	2.89	-	<0.02	0.3	1.4	1.09	0.58	0.62	<0.02	<0.02	0.15	<0.05	<0.02	<0.02	<0.05	1	0.08	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.87**	11.9
MW173	5/04/2019	Normal	EB1908876	-	0.17	0.14	0.91	0.02	0.17	-	<0.02	<0.1	0.33	0.19	0.08	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.08	2.06
MW173	5/04/2019	Field_D	EB1908876	-	0.17	0.14	0.93	<0.02	0.17	-	<0.02	<0.1	0.32	0.19	0.08	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.1	2.05
MW173	5/04/2019	Interlab_D	ES1910860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW173	5/04/2019	Interlab_D	RN1229258	-	0.15	0.11	0.82	0.018	0.16	<0.01	<0.01	0.091	0.31	0.15	0.071	0.045	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW173	23/05/2019	Normal	657987	0.07	0.13	0.12	0.97	0.03	0.14	<0.01	<0.01	0.07	0.33	0.25	0.07	0.05	<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	<0.05	-	1.11	2.23
MW173	23/10/2019	Normal	EB1928436	-	0.39	0.41	4.05	0.23	2.98	-	<0.02	0.4	1.74	1.46	0.83	0.84	0.03	<0.02	0.2	<0.05	<0.02	<0.02	<0.05	1.4	0.12	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.03**	15.1
MW173	26/03/2020	Normal	EB2009332	-	0.32	0.39	3.04	0.21	2.88	-	<0.03	0.2	1.44	1.18	0.66	0.7	<0.03	<0.03	0.14	<0.08	<0.03	<0.03	<0.05	1.01	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	-	**5.92**	12.2
MW173	26/03/2020	Field_D	EB2009332	-	0.35	0.43	3.2	0.21	2.97	-	<0.03	0.2	1.5	1.24	0.72	0.7	<0.03	<0.03	0.14	<0.08	<0.03	<0.03	<0.05	1.07	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	-	**6.17**	12.7
MW173	26/03/2020	Interlab_D	RN1270680	-	0.35	0.32	2.6	0.16	2.3	<0.01	<0.01	0.43	1.5	1.3	0.71	0.73	<0.01	<0.01	0.17	<0.02	<0.02	<0.01	<0.01	1.1	0.036	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW173	20/10/2020	Normal	EB2027817	-	0.29	0.29	2.67	0.18	2.27	-	<0.02	0.3	1.28	0.97	0.58	0.56	<0.02	<0.02	0.12	<0.05	<0.02	<0.02	<0.05	0.54	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.94**	10
MW173	20/10/2020	Field_D	EB2027817	-	0.32	0.31	2.9	0.17	1.85	-	<0.02	<0.35	1.22	<0.98	0.61	0.57	<0.02	<0.02	0.12	<0.05	<0.02	<0.02	<0.05	0.42	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.75**	8.49
MW173	20/10/2020	Interlab_D	RN1292789	-	0.23	0.21	2.3	0.1	1.6	<0.01	<0.01	0.31	0.96	0.99	0.54	0.51	0.012	<0.01	0.099	<0.02	<0.02	<0.01	<0.01	0.34	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW173	14/04/2021	Normal	EB2110967	-	0.22	0.25	2.32	0.14	2.01	-	<0.02	0.3	0.93	0.96	0.5	0.46	<0.02	<0.02	0.11	<0.05	<0.02	<0.02	<0.05	0.23	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.33**	8.43
MW174	29/01/2014	Normal	EB1402209	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-
MW174	21/05/2014	Normal	EB1412441	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW174	25/04/2018	Normal	EB1810408	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW174	25/04/2018	Field_D	EB1810408	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW174	25/04/2018	Interlab_D	AECO06_180501	-	<0.01	<0.01	0.014	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW174	20/10/2018	Interlab_D	AECO06_181024	-	<0.01	<0.01	0.013	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW174	20/10/2018	Normal	EB1825398	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW174	20/10/2018	Field_D	EB1825398	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW174	17/04/2019	Normal	EB1910095	-	0.02	<0.02	0.25	<0.02	0.34	-	<0.02	<0.1	0.05	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.59	0.67
MW174	10/07/2019	Normal	EB1918202	-	0.0313	0.0241	0.0957	0.0046	0.0755	-	<0.0005	0.016	0.101	0.13	0.0267	0.0141	0.0012	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.171	0.523
MW174	22/10/2019	Normal	EB1928436	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW174	22/10/2019	Field_D	EB1928436	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW174	22/10/2019	Interlab_D	RN1251384	-	<0.01	<0.01	0.012	<0.01	<0.02	<0.01	<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	0.015	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW174	29/10/2019	Normal	EB1928975	-	0.0406	0.0273	0.0838	0.004	0.0612	-	<0.0005	0.015	0.149	0.184	0.0381	0.011	0.0013	<0.0005	0.0015	<0.0005	<0.0005	<0.0005	<0.001	0.41	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.145	1.03
MW174	4/03/2020	Normal	EB2006415	-	0.0293	0.0171	0.0588	0.0026	0.0408	-	<0.0005	0.012	0.092	0.264	0.0641	0.012	0.001	<0.0005	0.001	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0996	0.595
MW174	26/03/2020	Normal	EB2008691	-	<0.02	<0.02	0.08	<0.02	0.08	-	<0.02	<0.1	0.03	0.05	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.52	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.16	0.76
MW174	22/05/2020	Normal	EB2013705	-	0.02	<0.02	0.16	<0.02	0.17	-	<0.02	<0.10	0.04	0.05	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.29	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.33	0.73
MW174	19/10/2020	Normal	EB2027817	-	<0.60	0.02	0.09	<0.02	0.09	-	<0.02	<0.20	0.09	0.16	0.06	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.94	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.18	1.45
MW174	14/04/2021	Normal	EB2110967	-	<0.02	<0.02	0.06	<0.02	0.05	-	<0.02	<0.2	<0.11	0.17	0.05	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.72	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.11	1.05
MW176	5/11/2015	Normal	EB1534037	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW176	5/11/2015	Normal	EB1534043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW176	2/02/2016	Normal	EB1603057	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW176	9/02/2016	Normal	EB1603672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW176	4/05/2016	Normal	EB1611805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW176	4/05/2016	Normal	EB1611808	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-
MW176	24/03/2017	Normal	EB1705969	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	16/11/2017	Normal	EB1724162	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	23/11/2017	Normal	EB1724901	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	1/12/2017	Normal	EB1725515	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.09	0.09
MW176	13/12/2017	Normal	EB1726841	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	21/12/2017	Normal	EB1727394	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	10/01/2018	Normal	EB1801708	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01

Location Code	Date	Sample Type	Lab Report	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L	µg/L
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
Location Code	**Date**	**Sample Type**	**Lab Report**																																	
MW176	17/01/2018	Normal	EB1802116	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	24/01/2018	Normal	EB1802712	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	30/01/2018	Normal	EB1803286	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	6/02/2018	Normal	EB1803821	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	15/02/2018	Normal	EB1804328	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	21/02/2018	Normal	EB1804815	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	27/02/2018	Normal	EB1805780	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	6/03/2018	Normal	EB1806160	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	13/03/2018	Normal	EB1806857	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	20/03/2018	Normal	EB1807454	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW176	28/03/2018	Normal	EB1808121	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	3/04/2018	Normal	EB1808415	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	11/04/2018	Normal	EB1809152	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	18/04/2018	Normal	EB1809906	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	24/04/2018	Normal	EB1810407	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	1/05/2018	Normal	EB1810939	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	11/05/2018	Normal	EB1811569	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	18/05/2018	Normal	EB1812201	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	22/05/2018	Normal	EB1812713	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW176	20/06/2018	Normal	B682895-A	-	<0.001	<0.001	0.001	<0.001	0.013	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.002	<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	<0.005	0.014	0.018
MW176	20/06/2018	Normal	B682895-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05
MW176	18/07/2018	Normal	B692234-A	-	<0.01	<0.01	<0.01	<0.01	0.02	<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	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
MW176	18/07/2018	Normal	B692234-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05
MW176	18/07/2018	Field_D	B692234-A	-	<0.01	<0.01	<0.01	<0.01	0.02	<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	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
MW176	18/07/2018	Field_D	B692234-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05
MW176	11/07/2019	Normal	EB1918202	-	<0.0005	<0.0005	0.0008	<0.0005	0.0037	-	<0.0005	<0.002	<0.0005	0.0007	<0.0005	0.0015	<0.0005	<0.0005	0.0013	<0.0005	<0.0005	0.0007	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0045	0.0087
MW176	29/10/2019	Normal	EB1928975	-	<0.0005	<0.0005	0.0012	<0.0005	0.0052	-	<0.0005	<0.002	<0.0005	0.0011	<0.0005	0.002	<0.0005	<0.0005	0.0018	<0.0005	<0.0005	0.0008	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0064	0.0121
MW176	4/03/2020	Normal	EB2006415	-	<0.0005	<0.0005	0.0006	<0.0005	0.0052	-	<0.0005	<0.002	<0.0005	<0.0005	0.0005	0.0017	0.0007	<0.0005	0.0014	<0.0005	<0.0005	0.0006	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0058	0.0107
MW177	29/01/2014	Normal	EB1402209	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.5	-	-	-	-	-	-	-	-	-	-	-
MW177	21/05/2014	Normal	EB1412441	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW177	29/10/2014	Normal	EB1445390	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW177	2/02/2016	Normal	EB1603057	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW177	9/02/2016	Normal	EB1603672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW177	4/05/2016	Normal	EB1611805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW177	4/05/2016	Normal	EB1611808	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW177	24/03/2017	Normal	EB1705969	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	16/11/2017	Normal	EB1724162	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	24/11/2017	Normal	EB1724901	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	30/11/2017	Normal	EB1725515	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW177	30/11/2017	Field_D	EB1725515	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW177	30/11/2017	Interlab_D	AECO06_171205	-	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW177	14/12/2017	Interlab_D	AECO06_171219	-	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW177	14/12/2017	Normal	EB1726841	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW177	14/12/2017	Field_D	EB1726841	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	20/12/2017	Normal	EB1727394	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	20/12/2017	Field_D	EB1727394	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	20/12/2017	Interlab_D	AECO06_180102	-	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW177	10/01/2018	Normal	EB1801708	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW177	10/01/2018	Field_D	EB1801708	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	10/01/2018	Interlab_D	AECO06_180116	-	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW177	16/01/2018	Normal	EB1802116	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	23/01/2018	Normal	EB1802712	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW177	6/02/2018	Normal	EB1803821	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	13/02/2018	Normal	EB1804328	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW177	21/02/2018	Normal	EB1804815	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	27/02/2018	Normal	EB1805780	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	6/03/2018	Normal	EB1806160	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	13/03/2018	Normal	EB1806857	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	20/03/2018	Normal	EB1807454	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW177	27/03/2018	Normal	EB1808121	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	3/04/2018	Normal	EB1808415	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW177	11/04/2018	Normal	EB1809152	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	18/04/2018	Normal	EB1809906	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW177	24/04/2018	Normal	EB1810407	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW177	1/05/2018	Normal	EB1810939	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW177	11/05/2018	Normal	EB1811569	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW177	18/05/2018	Normal	EB1812201	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW177	22/05/2018	Normal	EB1812713	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW177	21/06/2018	Normal	B682895-A	-	0.001	0.001	0.008	<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	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	0.008	0.015
MW177	21/06/2018	Normal	B682895-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05
MW177	21/06/2018	Normal	B682895-A	-	0.001	0.001	0.007	<0.001	0.014	<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	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	0.021	0.023
MW177	21/06/2018	Normal	B682895-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05
MW177	17/07/2018	Normal	B692234-A	-	<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	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
MW177	17/07/2018	Normal	B692234-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05

				PFAS - Perfluoroalkyl Sulfonic Acids								**PFAS - Perfluoroalkyl Carboxylic Acids**											**PFAS - Fluorotelomer Sulfonic**				**PFAS - Perfluoroalkyl Sulfonamides**								**Sum of PFAS**	
				Perfluoropropanesulfonic acid (PFPrS)	**Perfluorobutane sulfonic acid (PFBS)**	**Perfluoropentane sulfonic acid (PFPeS)**	**Perfluorohexane sulfonic acid (PFHxS)**	**Perfluoroheptane sulfonic acid (PFHpS)**	**Perfluorooctane sulfonic acid (PFOS)**	**Perfluorononanesulfonic acid (PFNS)**	**Perfluorodecane sulfonic 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)**	**4:2 Fluorotelomer sulfonic acid (4:2 FTS)**	**6:2 Fluorotelomer sulfonic acid (6:2 FTS)**	**8:2 Fluorotelomer sulfonic acid (8:2 FTS)**	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	**Perfluorooctane sulfonamide (FOSA)**	**N-Methyl perfluorooctane sulfonamide (MeFOSA)**	**N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)**	**N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)**	**N-Ethyl perfluorooctane sulfonamide (EtFOSA)**	**N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)**	**N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)**	**Perfluorooctane sulfonamidoacetic acid (FOSAA)**	**Sum of PFHxS and PFOS**	**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**	**µg/L**	**µg/L**
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
Location Code	**Date**	**Sample Type**	**Lab Report**																																	
MW177	11/07/2019	Normal	EB1918202	-	<0.0005	0.0006	0.0049	<0.0005	0.0061	-	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.011	0.0116
MW177	29/10/2019	Normal	EB1928975	-	0.0224	0.0024	0.0084	0.0011	0.0202	-	<0.0005	0.033	<0.0005	0.0047	0.0007	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.015	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0286	0.109
MW177	4/03/2020	Normal	EB2006415	-	<0.0005	0.001	0.0061	0.0016	0.0138	-	<0.0005	<0.002	0.0022	0.004	0.0008	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.008	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0199	0.0387
MW178	5/11/2015	Normal	EB1534037	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW178	5/11/2015	Normal	EB1534043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW178	2/02/2016	Normal	EB1603057	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW178	10/02/2016	Normal	EB1603672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW178	4/05/2016	Normal	EB1611805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW178	4/05/2016	Normal	EB1611808	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW178	24/03/2017	Normal	EB1705969	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	16/11/2017	Normal	EB1724162	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	24/11/2017	Normal	EB1724901	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	30/11/2017	Normal	EB1725515	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	14/12/2017	Normal	EB1726841	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	20/12/2017	Normal	EB1727394	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	9/01/2018	Normal	EB1801708	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	16/01/2018	Normal	EB1802116	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	23/01/2018	Normal	EB1802712	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW178	30/01/2018	Normal	EB1803286	-	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.05	0.05
MW178	6/02/2018	Normal	EB1803821	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW178	6/02/2018	Field_D	EB1803821	-	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.05	0.05
MW178	6/02/2018	Interlab_D	AECO06_180213_2	-	<0.01	<0.01	0.025	<0.01	0.028	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW178	14/02/2018	Normal	EB1804328	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW178	21/02/2018	Normal	EB1804815	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW178	27/02/2018	Normal	EB1805780	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	6/03/2018	Normal	EB1806160	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW178	13/03/2018	Normal	EB1806857	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW178	20/03/2018	Normal	EB1807454	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.05	0.05
MW178	27/03/2018	Normal	EB1808121	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW178	3/04/2018	Normal	EB1808415	-	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.05	0.05
MW178	11/04/2018	Normal	EB1809152	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	18/04/2018	Normal	EB1809906	-	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.05	0.05
MW178	18/04/2018	Field_D	EB1809906	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW178	18/04/2018	Interlab_D	AECO06_180424	-	<0.01	<0.01	0.015	<0.01	0.022	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW178	24/04/2018	Normal	EB1810407	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW178	24/04/2018	Field_D	EB1810407	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW178	24/04/2018	Interlab_D	AECO06_180501	-	<0.01	<0.01	0.014	<0.01	0.023	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW178	1/05/2018	Normal	EB1810939	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW178	1/05/2018	Field_D	EB1810939	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW178	1/05/2018	Interlab_D	AECO06_180515	-	<0.01	<0.01	0.013	<0.01	0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW178	11/05/2018	Normal	EB1811569	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	18/05/2018	Normal	EB1812201	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW178	22/05/2018	Normal	EB1812713	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW178	21/06/2018	Normal	B682895-A	-	0.002	0.002	0.013	0.001	0.019	<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	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	0.032	0.039
MW178	21/06/2018	Normal	B682895-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05
MW178	18/07/2018	Normal	B692234-A	-	<0.01	<0.01	0.01	<0.01	0.03	<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	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
MW178	18/07/2018	Normal	B692234-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05
MW178	19/10/2018	Normal	EB1825398	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	16/04/2019	Normal	EB1910095	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	11/07/2019	Normal	EB1918202	-	<0.0005	0.0008	0.0058	<0.0005	0.0049	-	<0.0005	<0.002	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0107	0.0121
MW178	23/10/2019	Normal	EB1928436	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	29/10/2019	Normal	EB1928975	-	<0.0005	0.0007	0.0054	0.0007	0.004	-	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.01	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0094	0.0208
MW178	4/03/2020	Normal	EB2006415	-	0.0026	0.0012	0.0073	<0.0005	0.0026	-	<0.0005	<0.002	0.0013	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0099	0.0168
MW178	26/03/2020	Normal	EB2008691	-	<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	<0.05	0.13	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.15
MW178	19/10/2020	Normal	EB2027817	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	19/10/2020	Field_D	EB2027817	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW178	19/10/2020	Interlab_D	RN1292789	-	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW178	17/04/2021	Normal	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW179	5/11/2015	Normal	EB1534037	-	-	-	-	-	1.36	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW179	5/11/2015	Normal	EB1534043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW179	10/02/2016	Normal	EB1603672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW179	10/02/2016	Normal	EB1603688	-	-	-	-	-	1.72	-	-	-	-	-	-	0.29	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW179	4/05/2016	Normal	EB1611805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW179	4/05/2016	Normal	EB1611808	-	-	-	-	-	0.76	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW179	28/03/2017	Normal	EB1706327	-	0.62	0.51	2.98	0.22	2.42	-	<0.02	<0.1	1.28	0.2	0.22	0.37	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.4**	8.82
MW179	20/10/2018	Interlab_D	AECO06_181024	-	0.46	0.36	2.1	0.15	2.6	<0.01	<0.01	0.23	1.1	0.24	0.18	0.25	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.025	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW179	20/10/2018	Normal	EB1825398	-	0.41	0.36	2	0.18	1.98	-	<0.02	0.2	1.05	0.2	0.18	0.26	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.98**	6.82
MW179	20/10/2018	Field_D	EB1825398	-	0.49	0.36	1.95	0.17	2.06	-	<0.02	0.2	1.04	0.2	0.18	0.27	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.01**	6.92
MW179	6/11/2019	Normal	EB1929759	-	0.46	0.41	2.08	0.17	1.78	-	<0.02	<0.1	1.06	0.22	0.2	0.27	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.86**	6.71
MW179	23/03/2020	Normal	EB2008693	-	0.6	0.48	2.49	0.21	2.79	-	<0.02	0.2	1.4	0.27	0.26	0.33	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.28**	9.03
MW179	23/03/2020	Field_D	EB2008693	-	0.38	0.35	1.96	0.18	2.03	-	<0.02	0.2	1.13	0.19	0.17	0.28	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.99**	6.87
MW179	23/03/2020	Interlab_D	RN1271386	-	0.49	0.38	2	0.13	1.9	<0.01	<0.01	0.23	1	0.25	0.19	0.27	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW179	20/10/2020	Normal	EB2027817	-	0.52	0.43	2.3	0.23	3.01	-	<0.02	0.2	1.47	0.29	0.23	0.35	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.31**	9.03
MW179	16/04/2021	Normal	EB2110967	-	0.57	0.51	2.6	0.26	3.05	-	<0.02	0.33	1.34	0.3	0.25	0.35	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.65**	9.56

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																			0.07	
PFAS NEMP 2020 Recreational Water													**10**																			**2**	

Location Code	Date	Sample Type	Lab Report																															
MW179	16/04/2021	Field_D	EB2110967	-	0.58	0.52	2.67	0.25	3.21	-	<0.02	0.23	1.44	0.32	0.27	0.4	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.88**	9.89
MW179	16/04/2021	Interlab_D	RN1312932	-	0.53	0.42	2.4	0.16	2.7	<0.01	<0.01	0.22	1.3	0.25	0.19	0.28	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW180	5/11/2015	Normal	EB1534037	-	-	-	-	-	2.71	-	-	-	-	-	-	0.52	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW180	5/11/2015	Normal	EB1534043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW180	5/11/2015	Field_D	EB1534037	-	-	-	-	-	2.76	-	-	-	-	-	-	0.47	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW180	5/11/2015	Field_D	EB1534043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW180	5/11/2015	Interlab_D	478996	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW180	5/11/2015	Interlab_D	480012	-	-	-	-	-	4.7	-	-	-	-	-	-	0.54	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW180	10/02/2016	Normal	EB1603672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW180	10/02/2016	Normal	EB1603688	-	-	-	-	-	3.82	-	-	-	-	-	-	0.74	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW180	10/02/2016	Field_D	EB1603688	-	-	-	-	-	3.17	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW180	10/02/2016	Interlab_D	489124	-	-	-	-	-	<0.04	-	-	-	-	-	-	0.47	-	-	-	-	-	-	-	-	<0.2	<0.04	-	-	-	-	-	-	-	-	-	-
MW180	4/05/2016	Normal	EB1611805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW180	4/05/2016	Normal	EB1611808	-	-	-	-	-	1.82	-	-	-	-	-	-	0.11	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-
MW180	28/03/2017	Interlab_D	AECO06_170404	-	0.85	-	4.2	-	2.5	-	<0.02	0.43	2.5	0.42	0.43	0.53	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	**6.7**	-
MW180	28/03/2017	Normal	EB1706327	-	1.3	1.11	5.91	0.49	4.01	-	<0.02	0.3	2.78	0.43	0.48	0.84	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**9.92**	17.6
MW180	28/03/2017	Normal	ES1709078	-	1.79	0.97	3.88	0.5	3.1	-	<0.002	1.54	2.99	1.51	0.43	0.7	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	-	**6.97**	17.4
MW180	28/03/2017	Normal	ES1709078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6.98**	-
MW180	28/03/2017	Field_D	EB1706327	-	1.46	0.93	6.66	0.47	3.81	-	<0.02	0.2	2.21	0.36	0.43	0.75	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**10.47**	17.28
MW180	28/03/2017	Field_D	EB1706327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10.5**	-
MW180	26/04/2018	Normal	EB1810408	-	0.53	0.37	1.9	0.19	2.55	-	<0.02	0.2	1.09	0.23	0.2	0.26	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.45**	7.52
MW180	26/04/2018	Field_D	EB1810408	-	0.48	0.38	2.04	0.19	2.36	-	<0.02	0.2	1.06	0.23	0.19	0.26	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.4**	7.39
MW180	26/04/2018	Interlab_D	AECO06_180501	-	0.4	0.32	1.9	0.12	1.8	<0.01	<0.01	0.18	1	0.19	0.14	0.21	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW180	16/04/2019	Normal	EB1910095	-	0.97	0.83	4.75	0.41	3.36	-	<0.02	0.4	2.6	0.49	0.42	0.62	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**8.11**	14.8
MW185	23/05/2014	Normal	EB1412619	-	-	-	-	-	179	-	-	-	-	-	-	**32.4**	-	-	-	-	-	-	-	-	1.5	<0.1	-	-	-	-	-	-	-	-	-	-
MW185	23/05/2014	Field_D	EB1412619	-	-	-	-	-	168	-	-	-	-	-	-	**31.6**	-	-	-	-	-	-	-	-	1.8	<0.1	-	-	-	-	-	-	-	-	-	-
MW185	23/05/2014	Interlab_D	419679	-	-	-	-	-	11	-	-	-	-	-	-	**22**	-	-	-	-	-	-	-	-	1.6	0.01	-	-	-	-	-	-	-	-	-	-
MW185	29/10/2014	Normal	EB1445390	-	-	-	-	-	222	-	-	-	-	-	-	**34.7**	-	-	-	-	-	-	-	-	2.1	<0.1	-	-	-	-	-	-	-	-	-	-
MW185	29/10/2014	Field_D	EB1445390	-	-	-	-	-	330	-	-	-	-	-	-	**39**	-	-	-	-	-	-	-	-	1.8	<0.1	-	-	-	-	-	-	-	-	-	-
MW185	29/10/2014	Interlab_D	437530	-	-	-	-	-	140	-	-	-	-	-	-	**35**	-	-	-	-	-	-	-	-	1.5	<0.01	-	-	-	-	-	-	-	-	-	-
MW185	10/02/2016	Normal	EB1603672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW185	10/02/2016	Normal	EB1603688	-	-	-	-	-	48.5	-	-	-	-	-	-	6.43	-	-	-	-	-	-	-	-	0.2	<0.1	-	-	-	-	-	-	-	-	-	-
MW185	10/02/2016	Field_D	EB1603672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW185	10/02/2016	Interlab_D	489138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW185	5/05/2016	Normal	EB1611805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW185	5/05/2016	Normal	EB1611808	-	185	153	874	54	375	-	<0.1	42.4	198	34.8	18.3	**39.5**	<0.1	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	1.56	<0.1	<0.1	<0.1	<0.25	<0.1	<0.25	<0.25	<0.1	<0.25	-	**1,249**	<0.1
MW185	5/05/2016	Field_D	EB1611808	-	-	-	-	-	401	-	-	-	-	-	-	**45.5**	-	-	-	-	-	-	-	-	2.03	<0.1	-	-	-	-	-	-	-	-	-	-
MW185	5/05/2016	Interlab_D	499665	-	-	-	-	-	260	-	-	-	-	-	-	**42**	-	-	-	-	-	-	-	-	2.7	0.09	-	-	-	-	-	-	-	-	-	-
MW185	28/03/2017	Normal	EB1706327	-	76.6	88.8	604	29.8	249	-	<0.02	28.6	99.2	28.6	16.8	**42.5**	<0.02	<0.02	0.05	<0.05	<0.02	<0.02	<0.05	<0.05	0.91	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**853**	1,260
MW185	28/03/2017	Normal	ES1709078	-	78.4	65.2	481	25.8	209	-	<0.002	<0.01	151	49.2	12.5	**23.1**	0.009	<0.002	0.04	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	-	**690**	1,100
MW186	10/03/2017	Normal	EB1705014	-	0.89	1.08	5.69	0.63	8.72	-	<0.02	<0.1	2.58	0.41	0.59	1.53	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**14.4**	22.2
MW186	10/03/2017	Normal	EB1705014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14.41**	-
MW186	13/03/2017	Interlab_D	AECO06_170316	-	0.56	-	4.3	-	5.6	-	<0.02	0.27	1.4	0.35	0.29	0.59	<0.02	<0.02	0.03	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	**9.9**	-
MW186	13/03/2017	Field_D	EB1705014	-	0.85	1.01	5.16	0.6	7.95	-	<0.02	<0.1	2.31	0.38	0.53	1.32	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**13.1**	20.1
MW186	13/03/2017	Field_D	EB1705014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**13.11**	-
MW187	28/04/2017	Interlab_D	AECO06_170502	-	0.13	-	1.2	-	0.97	-	<0.02	<0.05	0.26	0.069	0.036	0.06	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	**2.17**	-
MW187	28/04/2017	Normal	EB1708629	-	0.16	0.14	1.28	0.05	0.9	-	<0.02	<0.1	0.03	<0.02	<0.02	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.18**	2.62
MW187	28/04/2017	Normal	EB1708629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW187	28/04/2017	Field_D	EB1708629	-	0.16	0.13	1.31	0.05	0.89	-	<0.02	<0.1	0.02	<0.02	<0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.2**	2.61
MW187	15/11/2017	Normal	EB1724162	-	0.17	0.29	1.9	0.03	0.78	-	<0.02	<0.1	0.33	0.06	0.04	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.68**	3.6
MW187	23/11/2017	Interlab_D	AECO06_171128	-	0.12	0.12	1.1	0.034	0.89	<0.01	<0.01	0.05	0.2	0.057	0.031	0.056	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.01	0.01	0.01	0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	0.05	-	-	-
MW187	23/11/2017	Normal	EB1724901	-	0.18	0.17	1.26	0.06	1.03	-	<0.02	<0.1	0.24	0.08	0.04	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.29**	3.13
MW187	23/11/2017	Field_D	EB1724901	-	0.17	0.17	1.32	0.06	1.04	-	<0.02	<0.1	0.27	0.09	0.04	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.36**	3.24
MW187	30/11/2017	Normal	EB1725515	-	0.26	0.22	1.32	0.08	1.51	-	<0.02	<0.1	0.44	0.12	0.13	0.13	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.83**	4.21
MW187	13/12/2017	Normal	EB1726841	-	0.21	0.21	1.3	0.06	1.08	-	<0.02	<0.1	0.37	0.09	0.04	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.38**	3.45
MW187	21/12/2017	Normal	EB1727394	-	0.16	0.19	1.32	0.05	1.01	-	<0.02	<0.1	0.29	0.05	0.04	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.33**	3.18
MW187	10/01/2018	Normal	EB1801708	-	0.14	0.12	1.1	0.05	0.9	-	<0.02	<0.1	0.23	0.03	0.03	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	2	2.67
MW187	17/01/2018	Normal	EB1802116	-	0.09	0.11	0.41	0.03	0.74	-	<0.02	0.1	0.12	0.06	0.02	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.15	1.64
MW187	17/01/2018	Normal	EB1802116	-	0.12	0.12	0.71	0.04	0.79	-	-	-	0.18	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	2.23
MW187	17/01/2018	Field_D	EB1802116	-	0.1	0.1	0.45	0.03	0.76	-	<0.02	<0.1	0.12	0.07	0.02	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.21	1.72
MW187	17/01/2018	Field_D	EB1802116	-	0.14	0.12	0.66	0.04	0.87	-	-	0.2	0.27	0.14	-	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.53	2.55
MW187	17/01/2018	Interlab_D	AECO06_180123	-	0.1	0.11	0.95	0.029	0.68	<0.01	<0.01	<0.05	0.19	0.045	0.026	0.046	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	24/01/2018	Normal	EB1802712	-	0.12	0.13	0.76	0.04	0.71	-	<0.02	<0.1	0.2	0.07	0.03	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.47	2.13
MW187	24/01/2018	Field_D	EB1802712	-	0.12	0.12	0.83	0.04	0.75	-	<0.02	<0.1	0.2	0.06	0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.58	2.19
MW187	24/01/2018	Interlab_D	AECO06_180131	-	0.029	0.036	0.42	0.026	0.96	<0.01	<0.01	<0.05	0.057	<0.02	0.01	0.026	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	30/01/2018	Normal	EB1803286	-	0.14	0.14	1.11	0.04	0.81	-	<0.02	<0.1	0.21	0.07	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.92	2.61
MW187	7/02/2018	Normal	EB1803821	-	0.12	0.12	0.97	0.05	0.72	-	<0.02	<0.1	0.18	0.03	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.69	2.26
MW187	14/02/2018	Normal	EB1804328	-	0.11	0.13	0.9	0.05	0.81	-	<0.02	<0.1	0.18	<0.02	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.71	2.27
MW187	14/02/2018	Field_D	EB1804328	-	0.12	0.12	0.93	0.05	0.87	-	<0.02	<0.1	0.2	0.02	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.8	2.4
MW187	14/02/2018	Interlab_D	AECO06_180220	-	0.086	0.095	0.77	0.026	0.6	<0.01	<0.01	<0.05	0.14	0.035	0.02	0.034	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	21/02/2018	Normal	EB1804815	-	0.12	0.14	1.1	0.04	0.79	-	<0.02	<0.1	0.2	0.05	0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.89	2.51
MW187	21/02/2018	Field_D	EB1804815	-	0.11	0.14	1.08	0.04	0.78	-	<0.02	<0.1	0.2	0.06	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.86	2.48
MW187	21/02/2018	Interlab_D	AECO06_180223	-	0.083	0.1	0.77	0.024	0.56	<0.01	<0.01	<0.05	0.16	0.036	0.02	0.036	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	27/02/2018	Interlab_D	AECO06_180306	-	0.099	0.11	0.9	0.026	0.65	<0.01	<0.01	0.073	0.15	0.039	0.02	0.037	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L	µg/L
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
Location Code	**Date**	**Sample Type**	**Lab Report**																																	
MW187	27/02/2018	Normal	EB1805780	-	0.11	0.13	0.94	0.04	0.68	-	<0.02	<0.1	0.19	0.06	0.03	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.62	2.21
MW187	27/02/2018	Field_D	EB1805780	-	0.11	0.13	0.92	0.04	0.69	-	<0.02	<0.1	0.2	0.06	0.03	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.61	2.21
MW187	6/03/2018	Interlab_D	AECO06_180309	-	0.093	0.1	1.1	0.024	0.92	<0.01	<0.01	<0.05	0.16	0.038	0.022	0.038	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	6/03/2018	Normal	EB1806160	-	0.11	0.13	0.86	0.04	0.61	-	<0.02	<0.1	0.17	0.05	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.47	2.04
MW187	6/03/2018	Field_D	EB1806160	-	0.11	0.12	0.88	0.04	0.59	-	<0.02	<0.1	0.17	0.05	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.47	2.02
MW187	13/03/2018	Normal	EB1806857	-	0.07	0.06	1.04	0.04	0.66	-	<0.02	<0.1	0.14	0.04	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.7	2.16
MW187	13/03/2018	Normal	EB1806857	-	-	0.07	-	-	0.73	-	-	-	0.19	0.06	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.77	2.18
MW187	13/03/2018	Field_D	EB1806857	-	0.08	0.07	1.13	0.04	0.71	-	<0.02	<0.1	0.14	0.04	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.84	2.26
MW187	13/03/2018	Field_D	EB1806857	-	0.09	0.08	1.16	-	0.73	-	-	-	0.25	0.06	-	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.89	2.46
MW187	19/03/2018	Interlab_D	AECO06_180321	-	0.086	0.091	0.87	0.023	0.72	<0.01	<0.01	<0.05	0.16	0.037	0.019	0.032	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	21/03/2018	Normal	EB1807454	-	0.11	0.12	0.89	0.04	0.66	-	<0.02	<0.1	0.14	0.04	0.04	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.55	2.08
MW187	21/03/2018	Field_D	EB1807454	-	0.1	0.1	0.8	0.04	0.72	-	<0.02	<0.1	0.14	0.05	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.52	2.02
MW187	21/03/2018	Interlab_D	AECO06_180405_1	-	0.084	0.091	0.79	0.024	0.56	<0.01	<0.01	<0.05	0.14	0.034	0.019	0.034	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	27/03/2018	Normal	EB1808121	-	0.11	0.12	0.89	0.04	0.65	-	<0.02	<0.1	0.17	0.05	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.54	2.09
MW187	27/03/2018	Field_D	EB1808121	-	0.1	0.11	0.91	0.04	0.66	-	<0.02	<0.1	0.17	0.05	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.57	2.09
MW187	27/03/2018	Interlab_D	AECO06_180405_3	-	0.086	0.095	0.81	0.024	0.61	<0.01	<0.01	<0.05	0.15	0.037	0.02	0.034	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	3/04/2018	Normal	EB1808415	-	0.08	0.06	0.88	0.03	0.58	-	<0.02	<0.1	0.12	0.03	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.46	1.85
MW187	3/04/2018	Field_D	EB1808415	-	0.07	0.07	0.9	0.04	0.55	-	<0.02	<0.1	0.11	0.04	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.45	1.85
MW187	3/04/2018	Interlab_D	AECO06_180406	-	0.095	0.1	0.81	0.023	0.55	<0.01	<0.01	<0.05	0.16	0.038	0.02	0.033	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	11/04/2018	Normal	EB1809152	-	0.11	0.12	0.87	0.04	0.58	-	<0.02	<0.1	0.17	0.04	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.45	1.98
MW187	18/04/2018	Normal	EB1809906	-	0.11	0.12	0.91	0.02	0.66	-	<0.02	<0.1	0.17	0.04	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.57	2.09
MW187	24/04/2018	Normal	EB1810407	-	0.1	0.12	0.9	0.03	0.59	-	<0.02	<0.1	0.16	0.04	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.49	2
MW187	1/05/2018	Normal	EB1810939	-	0.1	0.1	0.84	0.03	0.61	-	<0.02	<0.1	0.16	0.04	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.45	1.95
MW187	11/05/2018	Normal	EB1811569	-	0.1	0.11	0.85	0.04	0.72	-	<0.02	<0.1	0.16	0.04	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.57	2.08
MW187	11/05/2018	Field_D	EB1811569	-	0.1	0.11	0.82	0.03	0.62	-	<0.02	<0.1	0.15	0.04	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.44	1.9
MW187	11/05/2018	Interlab_D	AECO06_180515_1	-	0.086	0.093	0.76	0.023	0.59	<0.01	<0.01	<0.05	0.14	0.034	0.021	0.034	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	18/05/2018	Normal	EB1812201	-	0.1	0.12	0.89	0.04	0.68	-	<0.02	<0.1	0.16	0.04	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.57	2.08
MW187	18/05/2018	Field_D	EB1812201	-	0.1	0.1	0.85	0.03	0.68	-	<0.02	<0.1	0.17	0.04	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.53	2.03
MW187	18/05/2018	Field_D	EB1812201	-	0.09	0.11	0.89	0.04	0.71	-	<0.02	<0.1	0.16	0.04	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.6	2.1
MW187	23/05/2018	Normal	EB1812713	-	0.1	0.11	1.08	0.04	0.65	-	<0.02	<0.1	0.12	0.04	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.73	2.2
MW187	23/05/2018	Field_D	EB1812713	-	0.1	0.12	1.19	0.05	0.66	-	<0.02	<0.1	0.14	0.04	0.04	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.85	2.38
MW187	23/05/2018	Interlab_D	AECO06_180530	-	0.075	0.086	0.72	0.021	0.48	<0.01	<0.01	<0.05	0.13	0.031	0.019	0.031	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	21/06/2018	Normal	B682895-A	-	0.082	0.11	0.84	0.038	0.63	<0.001	<0.001	<0.005	<0.001	0.037	0.021	0.064	<0.001	<0.001	0.002	<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	<0.005	1.5	1.8
MW187	21/06/2018	Normal	B682895-B	-	0.1	0.1	1	<0.05	0.5	<0.05	<0.05	<2.5	0.3	0.08	<0.05	0.06	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	1.52	2.24
MW187	21/06/2018	Normal	B682895-A	-	0.093	0.12	0.91	0.04	0.63	<0.001	<0.001	0.009	0.18	0.037	0.022	0.067	<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	<0.005	1.5	2.1
MW187	21/06/2018	Normal	B682895-B	-	0.1	0.1	1.1	<0.05	0.53	<0.05	<0.05	<2.5	0.3	0.09	<0.05	0.07	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	1.63	2.36
MW187	18/07/2018	Normal	B692234-A	-	0.09	0.13	0.71	0.04	0.48	<0.01	<0.01	<0.05	0.15	0.03	0.02	0.04	<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	<0.05	1.2	1.7
MW187	18/07/2018	Normal	B692234-B	-	0.08	0.2	0.71	<0.05	0.53	<0.05	<0.05	<2.5	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	1.24	1.7
MW187	25/10/2018	Interlab_D	AECO06_181030_1	-	0.082	0.091	0.77	0.025	0.6	<0.01	<0.01	<0.05	0.12	0.03	0.018	0.031	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	25/10/2018	Normal	EB1825962	-	0.08	0.13	0.97	0.04	0.58	-	<0.02	<0.1	0.15	0.03	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.55	2.02
MW187	25/10/2018	Field_D	EB1825962	-	0.07	0.12	0.87	0.03	0.49	-	<0.02	<0.1	0.12	0.03	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.36	1.76
MW187	16/04/2019	Normal	EB1910095	-	0.07	0.09	0.73	0.02	0.39	-	<0.02	<0.1	0.13	0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.12	1.48
MW187	11/07/2019	Normal	EB1918202	-	0.0507	0.07	0.475	0.027	0.274	-	<0.0005	0.005	0.114	0.0226	0.0131	0.025	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.001	0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.749	1.1
MW187	11/07/2019	Normal	EB1918202	-	0.06	0.0922	0.63	0.03	0.38	-	-	<0.1	0.2	0.1	0.04	0.05	-	-	<0.02	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	1.01	1.56
MW187	11/07/2019	Field_D	EB1918202	-	0.0571	0.091	0.536	0.0269	0.302	-	<0.0005	0.008	0.127	0.0217	0.0144	0.0294	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.001	0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.838	1.22
MW187	22/10/2019	Normal	EB1928436	-	0.06	0.09	0.71	0.02	0.31	-	<0.02	<0.1	0.11	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.02	1.35
MW187	29/10/2019	Normal	EB1928975	-	0.0908	0.103	0.603	0.0394	0.339	-	<0.0005	0.009	0.167	0.0311	0.0159	0.032	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.942	1.43
MW187	4/03/2020	Normal	EB2006415	-	0.0726	0.109	0.659	0.0317	0.373	-	<0.0005	<0.002	0.111	0.0256	0.0154	0.0292	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	1.03	1.43
MW187	4/03/2020	Field_D	EB2006415	-	0.0658	0.0817	0.488	0.0281	0.284	-	<0.0005	<0.002	0.0964	0.0227	0.0127	0.024	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.772	1.1
MW187	25/03/2020	Normal	EB2008691	-	<0.09	0.09	0.73	<0.09	0.38	-	<0.09	<0.5	0.11	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.23	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.23	<0.09	<0.23	<0.23	<0.09	<0.23	-	1.11	1.31
MW187	25/03/2020	Interlab_D	RN1271386	-	0.06	0.074	0.66	0.018	0.31	<0.01	<0.01	<0.05	0.11	0.023	0.013	0.024	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW187	20/10/2020	Normal	EB2027817	-	0.06	0.08	0.6	0.03	0.34	-	<0.02	<0.1	0.11	0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.94	1.27
MW187	17/04/2021	Normal	EB2110967	-	0.09	0.08	0.58	0.03	0.31	-	<0.02	<0.10	0.1	0.03	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.89	1.25
MW188	29/08/2017	Normal	EB1717689	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW188	16/11/2017	Normal	EB1724162	-	<0.02	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.03
MW188	24/11/2017	Normal	EB1724901	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW188	1/12/2017	Normal	EB1725515	-	0.05	<0.02	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.07	0.12
MW188	14/12/2017	Normal	EB1726841	-	<0.02	<0.02	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.07	0.07
MW188	21/12/2017	Normal	EB1727394	-	<0.02	<0.02	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.07	0.07
MW188	10/01/2018	Normal	EB1801708	-	<0.02	<0.02	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.08	0.08
MW188	17/01/2018	Normal	EB1802116	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.04
MW188	17/01/2018	Normal	EB1802116	-	-	-	-	-	0.05	-	-	-	-	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	0.08
MW188	24/01/2018	Normal	EB1802712	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW188	30/01/2018	Normal	EB1803286	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW188	6/02/2018	Normal	EB1803821	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW188	15/02/2018	Normal	EB1804328	-	<0.02	<0.02	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.08	0.08
MW188	21/02/2018	Normal	EB1804815	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW188	27/02/2018	Normal	EB1805780	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW188	6/03/2018	Normal	EB1806160	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.05	0.05
MW188	13/03/2018	Normal	EB1806857	-	<0.02	<0.02	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.07	0.07
MW188	20/03/2018	Normal	EB1807454	-	<0.02	<0.02	0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.07	0.07
MW188	28/03/2018	Normal	EB1808121	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW188	3/04/2018	Normal	EB1808415	-	<0.02	<0.02	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.07	0.07
MW188	11/04/2018	Normal	EB1809152	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L	µg/L
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
Location Code	**Date**	**Sample Type**	**Lab Report**																																	
MW188	18/04/2018	Normal	EB1809906	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW188	24/04/2018	Normal	EB1810407	-	<0.02	<0.02	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.08	0.08
MW188	1/05/2018	Normal	EB1810939	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.08	0.08
MW188	11/05/2018	Normal	EB1811569	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW188	18/05/2018	Normal	EB1812201	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW188	23/05/2018	Normal	EB1812713	-	<0.02	<0.02	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.08	0.08
MW188	20/06/2018	Normal	B682421-A	-	0.003	0.003	0.022	0.001	0.035	<0.001	<0.001	<0.005	0.006	<0.001	<0.001	0.006	<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	<0.005	0.057	0.08
MW188	20/06/2018	Normal	B682421-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05
MW188	18/07/2018	Normal	B692234-A	-	<0.01	<0.01	0.02	<0.01	0.04	<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	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	0.06	0.06
MW188	18/07/2018	Normal	B692234-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05
MW188	11/07/2019	Normal	EB1918202	-	<0.0005	0.0027	0.0116	0.001	0.0288	-	<0.0005	<0.002	0.004	0.0025	<0.0005	0.0041	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0404	0.0552
MW188	29/10/2019	Normal	EB1928975	-	0.0293	0.0055	0.0278	0.0019	0.054	-	<0.0005	<0.002	0.0104	0.0046	0.0013	0.0065	<0.0005	<0.0005	0.001	<0.0005	<0.0005	0.0007	<0.001	0.05	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0818	0.193
MW188	4/03/2020	Normal	EB2006415	-	<0.0005	0.0005	0.0037	<0.0005	0.0185	-	<0.0005	0.012	0.0016	0.0039	<0.0005	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.003	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0222	0.0446
MW189	28/04/2017	Normal	EB1708629	-	<0.02	<0.02	0.11	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.18	0.18
MW189	28/04/2017	Normal	EB1708629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW189	15/11/2017	Normal	EB1724162	-	<0.02	0.04	0.19	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.26	0.3
MW189	15/11/2017	Field_D	EB1724162	-	<0.02	0.03	0.21	<0.02	0.07	-	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.28	0.34
MW189	15/11/2017	Interlab_D	AECO06_171127_1	-	0.011	0.011	0.079	<0.01	0.061	<0.01	<0.01	<0.05	0.013	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	-	<0.01	<0.05	-	-	-
MW189	23/11/2017	Normal	EB1724901	-	<0.02	<0.02	0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.16	0.16
MW189	1/12/2017	Normal	EB1725515	-	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.17	0.19
MW189	13/12/2017	Normal	EB1726841	-	<0.02	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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.19	0.23
MW189	21/12/2017	Normal	EB1727394	-	<0.02	<0.02	0.11	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.17	0.19
MW189	9/01/2018	Normal	EB1801708	-	<0.02	<0.02	0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.18	0.2
MW189	17/01/2018	Normal	EB1802116	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.09	0.09
MW189	17/01/2018	Normal	EB1802116	-	-	-	0.06	-	0.07	-	-	-	-	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13	0.16
MW189	24/01/2018	Normal	EB1802712	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.12	0.14
MW189	31/01/2018	Normal	EB1803286	-	<0.02	<0.02	0.1	<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	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.13	0.13
MW189	31/01/2018	Field_D	EB1803286	-	<0.02	<0.02	0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.15	0.15
MW189	31/01/2018	Interlab_D	AECO06_180206_1	-	0.014	0.016	0.079	<0.01	0.057	<0.01	<0.01	<0.05	0.017	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW189	7/02/2018	Normal	EB1803821	-	<0.02	<0.02	0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.16	0.16
MW189	14/02/2018	Normal	EB1804328	-	0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.17	0.19
MW189	21/02/2018	Normal	EB1804815	-	<0.02	<0.02	0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.16	0.16
MW189	27/02/2018	Normal	EB1805780	-	<0.02	<0.02	0.09	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.15	0.17
MW189	6/03/2018	Normal	EB1806160	-	<0.02	<0.02	0.09	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.14	0.14
MW189	13/03/2018	Normal	EB1806857	-	<0.02	<0.02	0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.16	0.17
MW189	13/03/2018	Normal	EB1806857	-	-	-	-	-	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17	0.18
MW189	21/03/2018	Normal	EB1807454	-	0.02	0.02	0.09	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.17	0.21
MW189	27/03/2018	Normal	EB1808121	-	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.17	0.17
MW189	3/04/2018	Normal	EB1808415	-	<0.02	<0.02	0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.15	0.15
MW189	12/04/2018	Normal	EB1809152	-	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.19	0.19
MW189	12/04/2018	Field_D	EB1809152	-	<0.02	<0.02	0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.16	0.16
MW189	12/04/2018	Interlab_D	AECO06_180417_2	-	<0.01	0.012	0.076	<0.01	0.074	<0.01	<0.01	<0.05	0.013	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW189	18/04/2018	Normal	EB1809906	-	<0.02	<0.02	0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.16	0.16
MW189	24/04/2018	Normal	EB1810407	-	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.18	0.18
MW189	2/05/2018	Normal	EB1810939	-	<0.02	<0.02	0.08	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.15	0.15
MW189	11/05/2018	Normal	EB1811569	-	<0.02	<0.02	0.09	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.15	0.15
MW189	18/05/2018	Normal	EB1812201	-	<0.02	<0.02	0.08	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.16	0.16
MW189	23/05/2018	Normal	EB1812713	-	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.19	0.19
MW189	19/06/2018	Normal	B682421-A	-	0.012	0.014	0.078	0.003	0.064	<0.001	<0.001	<0.005	0.02	0.004	0.002	0.006	<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	<0.005	0.14	0.2
MW189	19/06/2018	Normal	B682421-B	-	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	0.08	0.08
MW189	17/07/2018	Normal	B692234-A	-	0.01	0.02	0.08	<0.01	0.1	<0.01	<0.01	<0.05	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	0.18	0.23
MW189	17/07/2018	Normal	B692234-B	-	<0.05	<0.05	0.08	<0.05	0.09	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	0.17	0.17
MW189	20/10/2018	Normal	EB1825398	-	<0.02	<0.02	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.07	0.07
MW189	17/04/2019	Normal	EB1910290	-	<0.02	<0.02	0.08	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.16	0.16
MW189	11/07/2019	Normal	EB1918202	-	0.0072	0.0123	0.0707	0.0034	0.0645	-	<0.0005	<0.002	0.0149	0.0027	0.0017	0.0033	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.135	0.181
MW189	22/10/2019	Normal	EB1928436	-	<0.02	<0.02	0.09	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.15	0.15
MW189	29/10/2019	Normal	EB1928975	-	0.0128	0.0141	0.0957	0.0044	0.0997	-	<0.0005	0.002	0.018	0.0039	0.002	0.0042	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.195	0.257
MW189	4/03/2020	Normal	EB2006415	-	0.0106	0.0144	0.0772	0.0046	0.088	-	<0.0005	<0.002	0.0145	0.004	0.0024	0.0047	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.165	0.22
MW189	25/03/2020	Normal	EB2008691	-	<0.03	<0.03	0.08	<0.03	0.08	-	<0.03	<0.2	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.08	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	-	0.16	0.16
MW189	20/10/2020	Normal	EB2027817	-	<0.02	<0.02	0.08	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.2	0.2
MW189	17/04/2021	Normal	EB2110967	-	<0.02	<0.02	0.08	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.2	0.2
MW190	13/04/2017	Normal	EB1707685	-	1.25	0.24	13.3	1.55	41.7	-	<0.02	<0.1	<0.02	0.24	0.03	0.72	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**55**	59.1
MW190	5/05/2017	Normal	EB1709193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW191	29/08/2017	Normal	EB1717689	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	29/08/2017	Field_D	EB1717689	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	29/08/2017	Interlab_D	AECO06/170901	-	<0.01	-	<0.02	-	<0.01	-	<0.02	<0.05	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	-	-
MW191	16/11/2017	Normal	EB1724162	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	24/11/2017	Normal	EB1724901	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	1/12/2017	Normal	EB1725515	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW191	13/12/2017	Normal	EB1726841	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	21/12/2017	Normal	EB1727394	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	10/01/2018	Normal	EB1801708	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	17/01/2018	Normal	EB1802116	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	24/01/2018	Normal	EB1802712	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L	µg/L
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
Location Code	**Date**	**Sample Type**	**Lab Report**																																	
MW191	30/01/2018	Normal	EB1803286	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	6/02/2018	Normal	EB1803821	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	15/02/2018	Normal	EB1804328	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	21/02/2018	Normal	EB1804815	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	27/02/2018	Normal	EB1805780	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	6/03/2018	Normal	EB1806160	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	13/03/2018	Normal	EB1806857	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW191	20/03/2018	Normal	EB1807454	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	28/03/2018	Normal	EB1808121	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	3/04/2018	Normal	EB1808415	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	11/04/2018	Normal	EB1809152	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	18/04/2018	Normal	EB1809906	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	24/04/2018	Normal	EB1810407	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	1/05/2018	Normal	EB1810939	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	11/05/2018	Normal	EB1811569	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	18/05/2018	Normal	EB1812201	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	23/05/2018	Normal	EB1812713	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW191	20/06/2018	Normal	B682895-A	-	<0.001	<0.001	0.002	<0.001	0.01	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	0.003	<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	<0.005	0.012	0.017
MW191	20/06/2018	Normal	B682895-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05
MW191	17/07/2018	Normal	B692234-A	-	<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	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05
MW191	17/07/2018	Normal	B692234-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05
MW191	11/07/2019	Normal	EB1918202	-	<0.0005	<0.0005	<0.0005	<0.0005	0.0017	-	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0017	0.0022
MW191	29/10/2019	Normal	EB1928975	-	<0.0005	<0.0005	0.003	<0.0005	0.0126	-	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	0.0034	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0156	0.021
MW191	30/10/2019	Field_D	EB1928975	-	<0.0005	<0.0005	0.0016	<0.0005	0.0148	-	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	0.0045	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0164	0.0229
MW191	4/03/2020	Normal	EB2006415	-	<0.0005	<0.0005	0.0024	<0.0005	0.014	-	<0.0005	<0.002	0.0018	<0.0005	<0.0005	0.0046	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.003	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0164	0.0258
MW193	23/05/2014	Normal	EB1412619	-	-	-	-	-	28.6	-	-	-	-	-	-	5.2	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW193	23/05/2014	Normal	EB1412619	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW193	2/02/2016	Normal	EB1603057	-	5.02	-	25.7	-	23.8	-	<0.02	-	8.5	-	3.59	3.82	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	49.5	-
MW193	5/05/2016	Normal	EB1611808	-	-	-	-	-	26.5	-	-	-	-	-	-	4.48	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW193	9/03/2017	Normal	EB1704721	-	8.68	6.42	17.3	3.08	25.4	-	<0.02	10.1	5.67	3.58	4.57	7.98	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.21	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	42.7	93
MW193	9/03/2017	Normal	EB1704721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW193	23/04/2018	Normal	EB1810408	-	3.88	4.43	22.3	2.27	36.3	-	<0.02	3.7	12	2.86	2.88	4.02	<0.02	<0.02	0.05	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	58.6	94.9
MW193	23/06/2018	Normal	B683754-A	-	2.9	2.7	17	1.3	18	<0.01	<0.01	2.8	7.3	1.8	2	4	<0.01	<0.01	0.041	<0.01	<0.01	<0.01	<0.01	<0.05	0.028	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	34.82	59.89
MW193	23/06/2018	Normal	B683754-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW193	23/06/2018	Normal	B683754-B	-	3.4	3.1	16	1.4	15	<0.05	<0.05	5.6	12	4.9	2.4	3.4	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	31.15	67.68
MW193	23/06/2018	Field_D	B683754-A	-	2.5	2.3	18	1.1	19	<0.01	<0.01	2.4	6.2	1.8	1.8	3.3	<0.01	<0.01	0.035	<0.01	<0.01	<0.01	<0.01	<0.05	0.027	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	36.94	58.55
MW193	23/06/2018	Field_D	B683754-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW193	23/06/2018	Field_D	B683754-B	-	2.8	2.6	14	1.1	11	<0.05	<0.05	5.3	11	4.3	2.2	3.2	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	25.25	58.1
MW193	20/10/2018	Normal	EB1825398	-	2.71	2.54	14.6	1.22	19	-	<0.02	2.8	6.66	1.71	1.73	2.96	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	33.6	56
MW193	8/04/2019	Normal	EB1909359	-	3.25	2.94	18.2	1.42	21.6	-	<0.02	3.5	8.16	2.04	2.13	3.63	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	39.8	67.1
MW193	11/07/2019	Normal	EB1918202	-	2.37	2.67	13.5	1.23	12.9	-	<0.0200	1.19	7.09	1.72	1.57	2.61	<0.0200	<0.0200	<0.0200	<0.0500	<0.0200	<0.0200	<0.020	0.05	<0.020	<0.020	<0.0200	<0.050	<0.0200	<0.050	<0.050	<0.0200	<0.050	-	26.4	46.9
MW193	11/07/2019	Normal	EB1918202	-	0.814	0.978	7.5	1	26.8	-	<0.0200	0.382	2.97	1.34	0.578	1.31	<0.0200	<0.0200	<0.0200	<0.0500	<0.0200	<0.0200	<0.020	0.22	<0.020	<0.020	<0.0200	<0.050	<0.0200	<0.050	<0.050	<0.0200	<0.050	-	34.3	43.9
MW193	23/10/2019	Normal	EB1928436	-	3.48	3.94	21.3	1.49	21.8	-	<0.02	2.4	11.7	2.55	2.68	4.05	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	43.1	75.6
MW193	30/10/2019	Normal	EB1928975	-	4.28	4.64	18.4	2.43	21.4	-	<0.0100	1.02	9.83	3.08	2.52	5.06	<0.0100	<0.0100	0.048	<0.0250	<0.0100	<0.0100	<0.010	0.183	0.036	<0.010	<0.0100	<0.025	<0.0100	<0.025	<0.025	<0.0100	<0.025	-	39.8	72.9
MW193	30/10/2019	Normal	EB1928975	-	1.28	1.5	9.84	1.57	33.1	-	<0.0100	0.963	4.18	1.76	0.987	2.02	<0.0100	<0.0100	0.029	<0.0250	<0.0100	<0.0100	<0.010	0.256	0.014	<0.010	0.026	<0.025	<0.0100	<0.025	<0.025	<0.0100	<0.025	-	42.9	57.5
MW193	5/03/2020	Normal	EB2006415	-	2.48	2.49	12.8	1.53	12.6	-	<0.0016	0.92	7.04	1.57	1.65	2.78	<0.0016	<0.0016	0.0221	<0.0040	<0.0016	<0.0016	<0.002	0.084	0.012	<0.002	<0.0016	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	25.4	46
MW193	25/03/2020	Normal	EB2008691	-	3.93	3.88	20.4	1.96	24.1	-	<0.16	1.4	9.98	2.46	2.74	3.95	<0.16	<0.16	<0.16	<0.40	<0.16	<0.16	<0.16	0.18	<0.16	<0.16	<0.16	<0.40	<0.16	<0.40	<0.40	<0.16	<0.40	-	44.5	75
MW193	20/10/2020	Normal	EB2027817	-	3.2	3.48	17.1	1.68	17.3	-	<0.07	3.9	9.39	2.31	2.42	3.54	<0.07	<0.07	<0.07	<0.18	<0.07	<0.07	<0.07	0.13	<0.07	<0.07	<0.07	<0.18	<0.07	<0.18	<0.18	<0.07	<0.18	-	34.4	64.4
MW193	20/10/2020	Field_D	EB2027817	-	3.36	3.64	17.3	1.85	21.5	-	<0.04	1.9	9.8	2.3	2.46	3.74	<0.04	<0.04	0.05	<0.10	<0.04	<0.04	<0.05	0.14	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	-	38.8	68
MW193	20/10/2020	Interlab_D	RN1292789	-	3	2.6	14	1.1	17	<0.01	<0.01	3	6.8	1.9	1.8	2.7	<0.01	<0.01	0.038	<0.02	<0.02	<0.01	<0.01	0.13	0.037	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW193	14/04/2021	Normal	EB2110967	-	3.91	4.23	17	1.84	25.9	-	<0.04	4.1	9.92	2.62	2.52	3.8	<0.04	<0.04	0.04	<0.10	<0.04	<0.04	<0.05	0.14	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	-	42.9	76
MW198	2/02/2016	Normal	EB1603057	-	3.81	-	23.2	-	37.7	-	<0.02	-	7.38	-	3.21	2.85	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	0.3	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	60.9	-
MW198	5/05/2016	Normal	EB1611808	-	-	-	-	-	53.5	-	-	-	-	-	-	3.33	-	-	-	-	-	-	-	0.3	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW198	8/03/2017	Normal	EB1704721	-	3.32	2.66	14.2	2.25	48.3	-	<0.02	2.7	3.01	2.52	1.85	3.87	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.47	<0.05	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	62.5	85.2
MW198	23/04/2018	Normal	EB1810408	-	1.54	1.76	13.8	1.73	53	-	<0.02	0.9	4.6	1.81	1.19	1.9	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	<0.05	0.28	<0.05	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	66.8	82.6
MW198	23/06/2018	Normal	B683754-A	-	1.3	1.3	8.9	1.2	29	<0.01	<0.01	0.78	3.9	1.5	1.1	2.2	<0.01	<0.01	0.017	<0.01	<0.01	<0.01	<0.01	<0.05	0.015	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	37.42	50.98
MW198	23/06/2018	Normal	B683754-B	-	1.4	1.5	11	1.2	23	<0.05	<0.05	3.8	15	4.2	1.4	2.2	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	33.76	64.61
MW198	26/06/2018	Normal	B684401-A	-	0.61	0.5	3.8	0.14	2.6	<0.01	<0.01	0.098	0.75	0.26	0.091	0.21	<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	<0.05	6.46	9.21
MW198	26/06/2018	Normal	B684401-B	-	0.61	0.56	3.8	0.4	2.1	<0.05	<0.05	<2.5	1.4	0.68	0.2	0.3	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	5.84	10.02
MW198	21/10/2018	Normal	EB1825398	-	1.23	1.26	8.66	1.21	33	-	<0.02	0.7	3.41	1.36	0.93	1.64	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	<0.05	0.24	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	41.7	53.7
MW198	10/04/2019	Normal	EB1909359	-	1.16	1.13	8.47	1.14	33.2	-	<0.02	0.8	3.55	1.37	0.97	1.74	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.23	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	41.7	53.8
MW198	22/10/2019	Normal	EB1928436	-	1.06	1.2	9.28	1.35	30.9	-	<0.02	1.4	3.58	1.44	0.96	1.67	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	<0.05	0.22	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	40.2	53.1
MW198	5/03/2020	Normal	EB2006415	-	0.0082	0.0099	0.0804	0.0141	0.626	-	<0.0005	<0.002	0.0279	0.0127	0.008	0.0141	0.001	<0.0005	0.0012	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.001	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.706	0.806
MW198	25/03/2020	Normal	EB2008691	-	1.06	1.19	8.88	1.3	28.6	-	<0.16	<0.8	3.31	1.33	0.88	1.38	<0.16	<0.16	<0.16	<0.40	<0.16	<0.16	<0.16	0.19	<0.16	<0.16	<0.16	<0.40	<0.16	<0.40	<0.40	<0.16	<0.40	-	37.5	48.1
MW198	19/10/2020	Normal	EB2027817	-	0.6	0.66	4.51	0.6	14	-	<0.04	0.5	1.89	0.82	0.51	0.86	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	<0.05	0.1	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	-	18.5	25
MW198	14/04/2021	Normal	EB2110967	-	0.14	0.18	1.28	0.18	5.4	-	<0.02	0.1	0.43	0.19	0.14	0.21	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	6.68	8.25
MW199	9/03/2017	Normal	EB1704721	-	0.95	0.66	3.65	0.26	4.64	-	<0.02	<0.1	0.88	0.28	0.17	0.31	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.2	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	8.29	12
MW201	13/03/2017	Normal	EB1705014	-	3.62	4.41	24.5	1.28	19.3	-	<0.02	0.3	5.95	1.01	0.75	2.51	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.44	<0.05	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	43.8	64.1
MW201	18/04/2019	Normal	EB1910290	-	4.69	7.69	38.4	2.81	16.5	-	<0.02	0.2	8.59	1.77	1.2	2.26	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.36	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	54.9	84.5
MW201	10/07/2019	Normal	EB1918202	-	3.39	4.28	24.4	1.67	10.8	-	<0.0005	0.236	5.56	1.19	0.804	1.63	0.0008	<0.0005	0.0159	<0.0005	<0.0005	<0.0005	<0.001	0.217	0.002	<0.001	0.0081	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	35.2	54.2
MW201	22/10/2019	Normal	EB1928436	-	31.6	30.8	203	10.4	89.1	-	<0.02	4.2	37.9	8.39	6.07	11.1	<0.02	<0.02	0.09	<0.05	<0.02	<0.02	<0.05	0.78	<0.05	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	325	498
MW201	22/10/2019	Field_D	EB1928436	-	30.2	30	207	11.8	99.2	-	<0.02	4.1	41.3	8.86	6.3	11.4	<0.02	<0.02	0.1	<0.05	<0.02	<0.02	<0.05	0.8	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	306	451
MW201	22/10/2019	Interlab_D	RN1251384	-	28	25	200	7.9	100	<0.01	<0.01	5.7	36	8	5	9.8	<0.01	<0.01	0.072	<0.02	<0.02	<0.01	<0.01	0.69	0.011	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW201	30/10/2019	Normal	EB1928975	-	4.12	3.64	28.7	1.24	10.4	-	<0.0005	0.388	6.38	1.33	0.798	1.71	0.0011	<0.0005	0.0191	<0.0005	<0.0005	<0.0005	<0.001	0.196	0.001	<0.001	0.0101	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	39.1	58.9

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L	µg/L
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
Location Code	**Date**	**Sample Type**	**Lab Report**																																	
MW201	5/03/2020	Normal	EB2006415	-	4.96	6.85	48	3.97	25.3	-	<0.0160	0.139	8.29	1.8	1.24	3.9	<0.0160	<0.0160	0.0304	<0.0400	<0.0160	<0.0160	<0.016	0.4	<0.016	<0.016	<0.0160	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	-	**73.3**	105
MW201	26/03/2020	Normal	EB2008691	-	6.3	7.96	52.8	3.49	28.9	-	<0.07	0.6	10	1.97	1.76	3.81	<0.07	<0.07	<0.07	<0.18	<0.07	<0.07	<0.07	0.48	<0.07	<0.07	<0.07	<0.18	<0.07	<0.18	<0.18	<0.07	<0.18	-	**81.7**	118
MW201	23/10/2020	Normal	EB2027817	-	10.2	10.8	69	4.06	36.2	-	<0.19	<0.9	16	3.44	2.29	4.36	<0.19	<0.19	<0.19	<0.47	<0.19	<0.19	<0.19	0.41	<0.19	<0.19	<0.19	<0.47	<0.19	<0.47	<0.47	<0.19	<0.47	-	**105**	157
MW201	15/04/2021	Normal	EB2110967	-	11.2	14.8	67.2	3.88	33.7	-	<0.04	1.9	17.3	3.85	2.57	4.67	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.05	0.43	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	-	**101**	162
MW202	13/03/2017	Normal	EB1705014	-	31.1	32	211	14.6	294	-	<0.02	2.4	41.4	7.41	2.56	**21.8**	0.02	<0.02	0.08	<0.05	<0.02	<0.02	<0.05	3.82	0.09	<0.05	0.09	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**505**	662
MW202	6/11/2017	Normal	EB1723185	-	8.61	11.6	56.9	3.68	88.1	-	<0.02	1.2	15.9	4.39	3.41	7.13	0.02	<0.02	0.11	<0.05	<0.02	<0.02	<0.05	0.96	0.07	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**145**	202
MW202	17/01/2018	Normal	EB1802116	-	15.6	16.4	69	6.9	89.6	-	<0.02	2.7	16.8	6.14	2.37	9.5	<0.02	<0.02	0.06	<0.05	<0.02	<0.02	<0.05	0.62	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**159**	237
MW202	17/01/2018	Normal	EB1802116	-	19.7	18.7	111	8.49	137	-	-	15.3	48.3	13.5	2.79	9.98	0.03	-	0.07	-	-	-	-	0.7	-	-	0.1	-	-	-	-	-	-	-	**248**	384
MW202	22/06/2018	Normal	B683485-A	-	18	17	140	9.5	200	<1.0	<1.0	2	27	6	4	**14**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**340**	430
MW202	22/06/2018	Normal	B683485-B	-	33	36	100	13	120	<0.05	<0.05	24	73	24	5.5	**18**	<0.05	<0.05	0.07	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**225.39**	451.64
MW202	27/06/2018	Normal	B684675-A	-	14	13	120	6.7	150	<0.01	<1.0	<1.0	22	<1.0	3.1	9.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**265.47**	334.92
MW202	27/06/2018	Normal	B684675-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW202	27/06/2018	Normal	B684675-B	-	28	27	110	12	120	<0.05	<0.05	19	81	23	4.7	**13**	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**229.64**	438.17
MW202	23/10/2018	Normal	EB1825962	-	24.4	32.8	199	13.6	164	-	<0.50	5	34.8	8	5.4	**10.5**	<0.50	<0.50	<0.50	<1.25	<0.50	<0.50	<0.50	1.35	<0.50	<0.50	<0.50	<1.25	<0.50	<1.25	<1.25	<0.50	<1.25	-	**363**	499
MW202	10/04/2019	Normal	EB1909359	-	54.2	51.6	384	24.3	331	-	<0.02	8.9	66.9	13.9	9	**20.5**	<0.02	<0.02	0.12	<0.05	<0.02	<0.02	<0.05	1	<0.05	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**715**	965
MW202	10/04/2019	Field_D	EB1909359	-	50.6	47.5	362	22	236	-	<0.02	8.5	63.8	13.3	9	**20.5**	<0.02	<0.02	0.11	<0.05	<0.02	<0.02	<0.05	1.1	<0.05	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**598**	834
MW202	10/04/2019	Interlab_D	RN1229846	-	53	49	320	13	190	<0.01	<0.01	9.1	58	17	7.9	**18**	<0.01	<0.01	0.11	<0.02	<0.02	<0.01	<0.01	1.1	0.014	<0.01	0.019	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW202	10/07/2019	Normal	EB1918202	-	35.6	37	326	16.8	132	-	<0.0200	2.43	48.9	9.97	5.11	**13.6**	<0.0200	<0.0200	0.078	<0.0500	<0.0200	<0.0200	<0.020	1.03	<0.020	<0.020	<0.0200	<0.050	<0.0200	<0.050	<0.050	<0.0200	<0.050	-	**458**	628
MW202	22/10/2019	Normal	EB1928436	-	3.94	5.09	32.3	1.16	9.25	-	<0.02	0.5	6.58	1.41	0.95	1.8	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.2	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**41.6**	63.2
MW202	30/10/2019	Normal	EB1928975	-	33.2	26.9	196	11.4	96.1	-	<0.0005	1.75	45.6	7.91	5.01	**10.8**	0.0043	<0.0005	0.072	<0.0005	<0.0005	<0.0005	0.004	0.682	0.013	<0.001	0.0214	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**292**	435
MW202	5/03/2020	Normal	EB2006415	-	46.8	65.4	642	81.1	928	-	<0.160	1.25	70	15.6	11.5	**44.9**	<0.160	<0.160	0.432	<0.400	<0.160	<0.160	<0.160	3.06	<0.160	<0.160	<0.160	<0.400	<0.160	<0.400	<0.400	<0.160	<0.400	-	**1,570**	1,910
MW202	30/03/2020	Normal	EB2009332	-	12.4	17.7	143	27.5	884	-	<0.32	<1.6	20.2	4.74	3.72	**16.2**	<0.32	<0.32	0.58	<0.80	<0.32	<0.32	<0.32	2.82	<0.32	<0.32	<0.32	<0.80	<0.32	<0.80	<0.80	<0.32	<0.80	-	**1,030**	1,130
MW202	23/10/2020	Normal	EB2027817	-	7.78	9.3	80.3	8.62	282	-	<0.40	<2.0	16.5	4.15	2.48	6.87	<0.40	<0.40	<0.40	<1.00	<0.40	<0.40	<0.40	0.84	<0.40	<0.40	<0.40	<1.00	<0.40	<1.00	<1.00	<0.40	<1.00	-	**362**	419
MW202	17/04/2021	Normal	EB2110967	-	9.42	10.2	85.2	7.07	301	-	<0.37	2.5	17.2	4.47	2.71	7.51	<0.37	<0.37	<0.37	<0.92	<0.37	<0.37	<0.37	0.95	<0.37	<0.37	0.55	<0.92	<0.37	<0.92	<0.92	<0.37	<0.92	-	**386**	449
MW203	6/11/2017	Normal	EB1723185	-	0.62	0.72	3.64	0.08	0.61	-	<0.02	<0.1	0.86	0.16	0.13	0.16	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.25**	6.98
MW203	31/01/2018	Normal	EB1803286	-	1.54	1.66	10.8	0.46	4.16	-	<0.02	0.3	2.22	0.47	0.35	0.55	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**15**	22.5
MW203	21/06/2018	Normal	B683754-A	-	1.7	2.3	11	0.49	4.6	<0.01	<0.01	0.35	2.6	0.59	0.37	0.92	<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	<0.05	**15.39**	24.79
MW203	21/06/2018	Normal	B683754-B	-	1.9	1.8	12	0.92	3.5	<0.05	<0.05	<2.5	3.9	1.3	0.55	0.72	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**15.44**	26.52
MW203	22/06/2018	Normal	B683485-A	-	1.4	1.4	9.3	0.43	2.6	<0.01	<0.01	0.31	2.1	0.48	0.34	0.63	<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	<0.05	**11.93**	19.02
MW203	22/06/2018	Normal	B683485-B	-	1.5	1.5	9.8	0.53	2.4	<0.05	<0.05	<2.5	3.7	0.95	0.4	0.91	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**12.25**	21.73
MW203	18/04/2019	Normal	EB1910290	-	2.03	2.58	14.1	0.85	5.42	-	<0.02	0.1	3.75	0.78	0.57	0.93	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**19.5**	31.2
MW203	10/07/2019	Normal	EB1918202	-	1.73	1.94	11.7	0.728	6.22	-	<0.0005	0.109	2.87	0.609	0.481	0.863	0.0007	<0.0005	0.0107	<0.0005	<0.0005	<0.0005	<0.001	0.067	0.002	<0.001	0.0012	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**17.9**	27.3
MW203	23/10/2019	Normal	EB1928436	-	0.08	0.06	0.49	0.03	0.58	-	<0.02	<0.1	0.1	0.03	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.07	1.43
MW203	30/10/2019	Normal	EB1928975	-	1.97	1.84	11.1	0.619	4.81	-	<0.0005	0.203	3.39	0.66	0.446	0.871	0.0006	<0.0005	0.0114	<0.0005	<0.0005	<0.0005	<0.001	0.064	<0.001	<0.001	0.0018	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**15.9**	26
MW203	5/03/2020	Normal	EB2006415	-	1.75	1.88	11.5	0.909	6.4	-	<0.0016	0.086	3.46	0.746	0.53	0.98	<0.0016	<0.0016	0.0126	<0.0040	<0.0016	<0.0016	<0.002	0.063	0.002	<0.002	<0.0016	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**17.9**	28.3
MW203	25/03/2020	Normal	EB2008691	-	2.12	2.04	13	0.71	6.69	-	<0.06	<0.3	3.62	0.77	0.61	1.05	<0.06	<0.06	<0.06	<0.16	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.16	<0.06	<0.16	<0.16	<0.06	<0.16	-	**19.7**	30.6
MW203	25/03/2020	Interlab_D	RN1271386	-	1.9	1.7	11	0.47	5.1	<0.01	<0.01	0.51	3.5	0.75	0.53	0.92	<0.01	<0.01	0.012	<0.02	<0.02	<0.01	<0.01	0.061	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW203	22/10/2020	Normal	EB2027817	-	1.59	1.82	11.2	0.62	4.71	-	<0.04	0.3	3.15	0.62	0.56	0.89	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	-	**15.9**	25.5
MW203	22/10/2020	Field_D	EB2027817	-	1.67	1.87	11.5	0.69	5.81	-	<0.04	<0.2	3.34	0.68	0.56	0.96	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	-	**17.3**	27.1
MW203	22/10/2020	Interlab_D	RN1292789	-	1.5	1.4	8.8	0.4	4.3	<0.01	<0.01	0.4	2.2	0.62	0.44	0.74	<0.01	<0.01	0.015	<0.02	<0.02	<0.01	<0.01	0.047	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW203	15/04/2021	Normal	EB2110967	-	2.25	2.34	11.8	0.72	8.04	-	<0.18	<0.9	3.66	0.92	0.63	1.14	<0.18	<0.18	<0.18	<0.45	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.45	<0.18	<0.45	<0.45	<0.18	<0.45	-	**19.8**	31.5
MW204	6/11/2017	Normal	EB1723185	-	190	184	791	22.7	174	-	<0.02	27.4	254	44	34.4	**39.7**	<0.02	<0.02	0.08	<0.05	<0.02	<0.02	<0.05	2.28	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**965**	1,760
MW204	31/01/2018	Normal	EB1803286	-	235	182	997	21.8	304	-	<0.02	42	239	57	33.2	**44.2**	<0.02	<0.02	0.24	<0.05	<0.02	<0.02	<0.05	2.65	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**1,300**	2,160
MW204	23/10/2018	Interlab_D	AECO06_181030_1	-	87	81	500	23	110	0.018	<0.01	17	110	22	13	**21**	<0.01	<0.01	0.065	<0.02	<0.02	<0.01	0.012	1.3	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW204	23/10/2018	Normal	EB1825962	-	77.8	127	532	30.2	123	-	<0.50	17.4	110	30.7	13.3	**20.6**	<0.50	<0.50	<0.50	<1.25	<0.50	<0.50	<0.50	1.65	<0.50	<0.50	<0.50	<1.25	<0.50	<1.25	<1.25	<0.50	<1.25	-	**655**	1,080
MW204	23/10/2018	Field_D	EB1825962	-	109	127	648	31.3	157	-	<1.00	19.4	125	28.7	17.4	**26.8**	<1.00	<1.00	<1.00	<2.50	<1.00	<1.00	<1.00	2.5	<1.00	<1.00	<1.00	<2.50	<1.00	<2.50	<2.50	<1.00	<2.50	-	**805**	1,290
MW204	10/04/2019	Normal	EB1909359	-	72.4	63.2	378	16.3	130	-	<0.02	12.8	88.8	18.2	11.2	**19.2**	<0.02	<0.02	0.06	<0.05	<0.02	<0.02	<0.05	4.8	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**508**	815
MW204	10/07/2019	Normal	EB1918202	-	40	37.1	193	7.62	49.9	-	<0.0200	2.82	52.3	12.6	5.86	**10.1**	<0.0200	<0.0200	<0.0200	<0.0500	<0.0200	<0.0200	<0.020	0.63	<0.020	<0.020	<0.0200	<0.050	<0.0200	<0.050	<0.050	<0.0200	<0.050	-	**243**	412
MW204	22/10/2019	Normal	EB1928436	-	43.5	36.6	166	3.48	17.9	-	<0.02	15	53.2	11.7	6.74	7.34	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	<0.05	0.33	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**184**	362
MW204	22/10/2019	Field_D	EB1928436	-	48.2	40.3	181	4	22.5	-	<0.02	12.5	59.7	13.4	6.82	7.48	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.34	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**204**	396
MW204	22/10/2019	Interlab_D	RN1251384	-	41	33	180	2.5	23	<0.01	<0.01	8.5	54	12	5.9	6.7	<0.01	<0.01	0.012	<0.02	<0.02	<0.01	<0.01	0.32	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW204	30/10/2019	Normal	EB1928975	-	34.8	26.9	139	2.91	15.2	-	<0.0005	2.12	49.3	8.81	4.69	5.2	0.0006	<0.0005	0.0131	<0.0005	<0.0005	<0.0005	0.007	0.299	<0.001	<0.001	0.0144	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**154**	289
MW204	5/03/2020	Normal	EB2006415	-	10.8	17.3	102	5.9	15.9	-	<0.0160	0.261	16.1	3.27	2.71	5.56	<0.0160	<0.0160	<0.0160	<0.0400	<0.0160	<0.0160	<0.016	0.256	<0.016	<0.016	<0.0160	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	-	**118**	180
MW204	25/03/2020	Normal	EB2008691	-	25.8	23.9	134	4.02	16.6	-	<0.32	<1.6	32.4	7.38	4.75	5.41	<0.32	<0.32	<0.32	<0.79	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.79	<0.32	<0.79	<0.79	<0.32	<0.79	-	**151**	254
MW204	22/10/2020	Normal	EB2027817	-	13.6	16.2	101	4.67	25.3	-	<0.20	1.5	21.8	4.67	3.93	6.12	<0.20	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	0.22	<0.20	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.50	-	**126**	199
MW204	17/04/2021	Normal	EB2110967	-	14.2	15.6	94.1	3.77	13.2	-	<0.38	3	20.5	4.34	3.43	5.9	<0.38	<0.38	<0.38	<0.95	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	<0.95	<0.38	<0.95	<0.95	<0.38	<0.95	-	**107**	178
MW205	6/11/2017	Normal	EB1723185	-	0.89	0.86	4.55	0.36	5.71	-	<0.02	<0.1	1.66	0.33	0.4	0.56	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**10.3**	15.3
MW205	6/11/2017	Field_D	EB1723185	-	0.86	0.84	4.47	0.36	5.69	-	<0.02	<0.1	1.66	0.33	0.39	0.56	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**10.2**	15.2
MW205	6/11/2017	Interlab_D	AECO03_171108	-	0.67	-	4	-	4.3	-	<0.02	0.22	1.2	0.3	0.24	0.39	<0.02	<0.02	0.013	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	-	-
MW205	22/06/2018	Normal	B683485-A	-	0.81	0.79	5.4	0.44	4	<0.01	<0.01	0.22	1.4	0.34	0.3	0.71	<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	<0.05	**9.38**	14.44
MW205	22/06/2018	Normal	B683485-B	-	0.97	0.95	5.7	0.77	2.1	<0.05	<0.05	<2.5	2.8	0.97	0.4	1.4	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**7.81**	16.1
MW205	27/06/2018	Normal	B685572-A	-	0.8	0.77	5.9	0.26	3.3	<0.01	<0.01	0.21	1.4	0.37	0.27	0.5	<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	<0.05	**9.15**	13.69
MW205	27/06/2018	Normal	B685572-B	-	1.1	1	6.1	0.54	2.5	<0.05	<0.05	<2.5	2.7	0.82	0.4	0.86	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**8.67**	16.02
MW205	23/10/2018	Normal	EB1825962	-	1.56	1.4	8.75	0.52	5.77	-	<0.02	0.4	2.17	0.48	0.34	0.6	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**14.5**	22
MW205	10/04/2019	Normal	EB1909359	-	1.89	1.66	9.66	0.44	4.74	-	<0.02	0.3	2.66	0.53	0.42	0.66	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**14.4**	23
MW205	10/07/2019	Normal	EB1918202	-	1.57	1.77	9.08	0.513	4.66	-	<0.0005	0.088	2.25	0.449	0.371	0.584	0.0008	<0.0005	0.0099	<0.0005	<0.0005	<0.0005	<0.001	0.01	0.002	<0.001	0.0006	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**13.7**	21.4
MW205	22/10/2019	Normal	EB1928436	-	1.9	2.06	11.4	0.45	3.88	-	<0.02	0.3	2.93	0.61	0.49	0.67	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**15.3**	24.7
MW205	22/10/2019	Field_D	EB1928436	-	1.72	2.07	11.4	0.42	3.94	-	<0.02	0.3	2.74	0.58	0.46	0.65	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**15.3**	24.3
MW205	22/10/2019	Interlab_D	RN1251384	-	1.7	1.5	9.2	0.39	3.3	<0.01	<0.01	0.47	2.3	0.57	0.4	0.57	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW205	30/10/2019	Normal	EB1928975	-	2.2	1.91	9.73	0.488	3.67	-	<0.0005	0.237	3.11	0.803	0.392	0.64	0.0009	<0.0005	0.0113	<0.0005	<0.0005	<0.0005	<0.001	0.01	<0.001	<0.001	0.0009	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**13.4**	23.2
MW205	5/03/2020	Normal	EB2006415	-	1.97	2	11.4	0.781	4.91	-	<0.0016	0.098	2.89	0.606	0.458	0.702	<0.0016	<0.0016	0.0114	<0.0040	<0.0016	<0.0016	<0.002	0.007	0.002	<0.002	<0.0016	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**16.3**	25.8
MW205	26/03/2020	Normal	EB2009332	-	2.08	2.24	11.5	0.62	5.89	-	<0.03	0.2	3.02	0.64	0.51	0.76	<0.03	<0.03	<0.03	<0.08	<0.03	<0.03	<0.05	0.09	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	-	**17.4**	27.6
MW205	22/10/2020	Normal	EB2027817	-	1.41	1.5	8.79	0.52	5.72	-	<0.04	<0.2	2.38	0.51	0.4	0.62	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	-	**14.5**	21.8
MW205	17/04/2021	Normal	EB2110967	-	1.39	1.5	8.6	0.5	5.58	-	<0.02	0.33	2.28	0.53	0.43	0.65	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**14.2**	21.8

Location Code	Date	Sample Type	Lab Report	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L	µg/L
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
Location Code	**Date**	**Sample Type**	**Lab Report**																																	
MW206	8/03/2017	Normal	EB1704721	-	1.14	0.87	5.7	0.4	9.29	-	<0.02	0.3	1.53	0.38	0.51	0.96	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**14.99**	21.1
MW206	8/03/2017	Normal	EB1704721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15**	-
MW206	19/04/2018	Normal	EB1809957	-	0.75	0.7	5.44	0.39	6.14	-	<0.02	0.2	1.19	0.28	0.38	0.67	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**11.6**	16.1
MW206	26/06/2018	Normal	B684401-A	-	0.8	0.73	7.1	0.35	5.3	<0.01	<0.01	0.24	1.4	0.34	0.47	0.97	<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	<0.05	**12.35**	17.65
MW206	26/06/2018	Normal	B684401-B	-	0.83	0.8	5.2	0.72	2.1	<0.05	<0.05	<2.5	3.5	0.88	0.63	0.57	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**7.34**	15.26
MW206	26/06/2018	Normal	B684401-A	-	0.61	0.56	5	0.25	3	<0.01	<0.01	0.29	1.1	0.45	0.33	0.78	<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	<0.05	**8.07**	12.48
MW206	26/06/2018	Normal	B684401-B	-	0.63	0.54	4.2	0.63	2.4	<0.05	<0.05	<2.5	2.9	0.83	0.6	0.53	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**6.62**	13.3
MW206	26/06/2018	Field_D	B684401-A	-	0.62	0.57	5.1	0.26	4	<0.01	<0.01	0.26	1.1	0.37	0.45	0.73	<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	<0.05	**9.13**	13.47
MW206	26/06/2018	Field_D	B684401-B	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	<0.05	<0.05
MW206	26/06/2018	Interlab_D	ME307157	-	0.89	0.94	13	0.42	15	<0.01	<0.01	0.48	1.7	0.49	0.27	0.48	<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	-	-	-
MW206	26/06/2018	Interlab_D	ME307157	-	0.91	-	14	0.5	16	-	-	1.5	4.8	1.5	0.31	0.49	-	-	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	-	-	-	-
MW206	21/10/2018	Interlab_D	AECO06_181024	-	0.64	0.56	4.6	0.28	4.7	<0.01	<0.01	0.33	1.1	0.29	0.36	0.55	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.028	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW206	21/10/2018	Normal	EB1825398	-	0.66	0.57	4.69	0.28	4.88	-	<0.02	0.2	0.97	0.24	0.32	0.59	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**9.57**	13.4
MW206	21/10/2018	Field_D	EB1825398	-	0.62	0.64	4.85	0.33	4.68	-	<0.02	0.2	1	0.25	0.33	0.57	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**9.53**	13.5
MW206	10/04/2019	Normal	EB1909359	-	0.34	0.31	2.39	0.16	2.07	-	<0.02	0.2	0.65	0.22	0.17	0.27	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.46**	6.78
MW206	11/07/2019	Normal	EB1918202	-	0.572	0.698	4.65	0.307	3.7	-	0.0028	0.053	1.06	0.246	0.256	0.499	0.0007	<0.0005	0.0068	<0.0005	<0.0005	<0.0005	<0.001	0.01	<0.001	<0.001	0.0017	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**8.35**	12.1
MW206	30/10/2019	Normal	EB1928975	-	0.847	0.876	6.29	0.432	5.63	-	<0.0100	0.248	1.46	0.343	0.363	0.678	<0.0100	<0.0100	0.01	<0.0250	<0.0100	<0.0100	<0.010	0.01	<0.010	<0.010	<0.0100	<0.025	<0.0100	<0.025	<0.025	<0.0100	<0.025	-	**11.9**	17.2
MW206	5/03/2020	Normal	EB2006415	-	0.682	0.876	5.77	0.504	7.71	-	<0.0016	0.032	1.22	0.278	0.32	0.617	0.0019	<0.0016	0.0099	<0.0040	<0.0016	<0.0016	<0.002	0.014	<0.002	<0.002	0.0037	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**13.5**	18
MW206	26/03/2020	Normal	EB2009332	-	0.8	0.84	5.44	0.4	5.92	-	<0.03	<0.2	1.33	0.31	0.37	0.61	<0.03	<0.03	<0.03	<0.08	<0.03	<0.03	<0.05	0.14	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	-	**11.4**	16.2
MW206	26/03/2020	Field_D	EB2009332	-	0.72	0.78	5.08	0.35	5.32	-	<0.03	<0.2	1.23	0.28	0.34	0.54	<0.03	<0.03	<0.03	<0.08	<0.03	<0.03	<0.05	0.13	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	-	**10.4**	14.8
MW206	26/03/2020	Interlab_D	RN1270680	-	0.73	0.63	5	0.28	5	<0.01	<0.01	0.23	1.2	0.31	0.32	0.52	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.21	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW206	19/10/2020	Normal	EB2027817	-	0.78	0.75	5.6	0.38	5.27	-	<0.04	<0.2	1.43	0.35	0.36	0.61	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	-	**10.9**	15.5
MW206	14/04/2021	Normal	EB2110967	-	0.61	0.72	4.89	0.37	6.07	-	<0.02	0.2	1.11	0.29	0.31	0.55	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**11**	15.1
MW207	8/03/2017	Normal	EB1704721	-	0.15	0.13	0.89	0.03	0.19	-	<0.02	<0.1	0.12	0.05	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.08	1.63
MW207	6/11/2019	Normal	EB1929759	-	0.02	0.03	0.22	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.24	0.31
MW208	8/03/2017	Normal	EB1704721	-	0.58	0.42	2.63	0.16	2.23	-	<0.02	<0.1	0.88	0.5	0.32	0.43	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.3	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.86**	8.45
MW209	13/09/2018	Normal	B710405	-	0.55	0.49	3.5	0.41	4.7	<0.01	<0.01	0.22	0.73	0.15	0.12	0.25	<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	<0.05	**8.17**	11.09
MW209	13/09/2018	Normal	B710405-A	-	0.55	0.49	3.5	0.41	4.7	<0.01	<0.01	0.22	0.73	0.15	0.12	0.25	<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	<0.05	**8.17**	11.09
MW209	13/09/2018	Normal	B710405-B	-	0.53	0.4	3.1	0.3	4.1	<0.05	<0.05	<2.5	1.1	0.4	0.1	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**7.16**	10.29
MW209	13/09/2018	Field_D	B710405	-	0.55	0.51	3.5	0.39	4	<0.01	<0.01	0.21	0.72	0.15	0.12	0.23	<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	<0.05	**7.48**	10.36
MW209	13/09/2018	Field_D	B710405-A	-	0.55	0.51	3.5	0.39	4	<0.01	<0.01	0.21	0.72	0.15	0.12	0.23	<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	<0.05	**7.48**	10.36
MW209	13/09/2018	Field_D	B710405-B	-	0.57	0.4	3.1	0.4	4.1	<0.05	<0.05	<2.5	1.1	0.4	0.1	0.2	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**7.19**	10.34
MW209	13/09/2018	Interlab_D	ME308150	-	0.47	0.44	2.5	0.26	3.9	<0.002	<0.002	0.21	0.75	0.14	0.1	0.22	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.002	0.004	<0.002	-	<0.008	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	**6.4**	-
MW209	10/07/2019	Normal	EB1918202	-	0.397	0.332	1.22	0.082	1.11	-	<0.0005	0.041	0.547	0.158	0.0976	0.112	0.0006	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.0007	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**2.33**	4.1
MW209	30/10/2019	Normal	EB1928975	-	0.561	0.362	1.32	0.118	0.655	-	<0.0005	0.089	0.787	0.225	0.12	0.127	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.0006	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	1.98	4.37
MW209	4/03/2020	Normal	EB2006415	-	0.603	0.47	1.26	0.0755	0.772	-	<0.0016	0.019	0.718	0.282	0.122	0.127	<0.0016	<0.0016	<0.0016	<0.0040	<0.0016	<0.0016	<0.002	<0.002	<0.002	<0.002	<0.0016	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**2.03**	4.45
MW210	13/09/2018	Normal	B710405	-	0.24	0.21	1.3	0.098	0.89	<0.01	<0.01	0.41	0.28	0.057	0.031	0.069	<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	<0.05	**2.15**	3.55
MW210	13/09/2018	Normal	B710405-A	-	0.24	0.21	1.3	0.098	0.89	<0.01	<0.01	0.41	0.28	0.057	0.031	0.069	<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	<0.05	**2.15**	3.55
MW210	13/09/2018	Normal	B710405-B	-	0.2	0.2	1	0.1	0.82	<0.05	<0.05	<2.5	0.4	0.1	<0.05	0.06	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	1.85	2.85
MW210	10/07/2019	Normal	EB1918202	-	0.243	0.271	1.62	0.184	2.42	-	<0.0005	0.054	0.295	0.063	0.0451	0.102	<0.0005	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.0011	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**4.04**	5.3
MW210	30/10/2019	Normal	EB1928975	-	0.395	0.288	2.31	0.233	2.92	-	0.0007	0.115	0.492	0.124	0.0833	0.168	<0.0005	<0.0005	0.0012	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.0022	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**5.23**	7.13
MW210	4/03/2020	Normal	EB2006415	-	0.622	0.61	3.26	0.405	4.76	-	<0.0016	0.054	0.625	0.145	0.105	0.232	<0.0016	<0.0016	0.0021	<0.0040	<0.0016	<0.0016	<0.002	0.022	<0.002	<0.002	0.0034	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**8.02**	10.8
MW211	13/09/2018	Normal	B710405	-	0.58	0.53	3.5	0.34	2.6	<0.01	<0.01	0.38	0.7	0.14	0.099	0.21	<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	<0.05	**6.1**	9.07
MW211	13/09/2018	Normal	B710405-A	-	0.58	0.53	3.5	0.34	2.6	<0.01	<0.01	0.38	0.7	0.14	0.099	0.21	<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	<0.05	**6.1**	9.07
MW211	13/09/2018	Normal	B710405-B	-	0.4	0.4	2.6	0.2	1.9	<0.05	<0.05	<2.5	0.94	0.3	0.08	0.1	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**4.5**	7.01
MW211	10/07/2019	Normal	EB1918202	-	0.223	0.217	1.24	0.126	1.37	-	<0.0005	0.039	0.261	0.057	0.0462	0.0939	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**2.61**	3.67
MW211	30/10/2019	Normal	EB1928975	-	0.297	0.209	1.47	0.133	1.3	-	<0.0005	0.068	0.359	0.0951	0.0485	0.099	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	0.0007	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**2.77**	4.08
MW211	5/03/2020	Normal	EB2006415	-	0.0217	0.0091	0.0374	0.0055	0.191	-	<0.0005	<0.002	0.0122	0.0113	0.0019	0.0065	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.228	0.297
MW212	20/09/2018	Normal	B712066	-	0.18	0.18	1.3	0.13	2.9	<0.01	<0.01	<0.05	0.3	0.06	0.03	0.11	<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	<0.05	**4.2**	5.2
MW212	10/07/2019	Normal	EB1918202	-	0.0251	0.0242	0.124	0.0109	0.24	-	<0.0005	<0.002	0.0323	0.0119	0.0068	0.0115	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.364	0.487
MW212	30/10/2019	Normal	EB1928975	-	0.0353	0.0303	0.0937	0.0052	0.152	-	<0.0005	0.006	0.0406	0.0135	0.0061	0.0069	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.246	0.39
MW212	5/03/2020	Normal	EB2006415	-	0.0408	0.0347	0.0878	0.004	0.111	-	<0.0005	<0.002	0.0518	0.0182	0.009	0.008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.199	0.365
MW213	13/09/2018	Normal	B710405	-	0.057	0.041	0.2	0.015	0.21	<0.01	<0.01	0.36	0.053	0.013	<0.01	0.011	<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	<0.05	0.41	0.95
MW213	13/09/2018	Normal	B710405-A	-	0.057	0.041	0.2	0.015	0.21	<0.01	<0.01	0.36	0.053	0.013	<0.01	0.011	<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	<0.05	0.41	0.95
MW213	13/09/2018	Normal	B710405-B	-	0.06	<0.05	0.2	<0.05	0.2	<0.05	<0.05	<2.5	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	0.4	0.61
MW213	10/07/2019	Normal	EB1918202	-	0.23	0.164	0.573	0.0406	0.482	-	<0.0005	0.072	0.275	0.073	0.0391	0.0421	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	1.06	1.99
MW213	30/10/2019	Normal	EB1928975	-	0.329	0.185	0.781	0.0808	0.484	-	<0.0005	0.074	0.382	0.123	0.0472	0.0511	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	1.26	2.54
MW213	5/03/2020	Normal	EB2006415	-	0.349	0.267	0.989	0.0866	0.874	-	<0.0016	0.014	0.326	0.0997	0.0451	0.0613	<0.0016	<0.0016	<0.0016	<0.0040	<0.0016	<0.0016	<0.002	<0.002	<0.002	<0.002	<0.0016	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	1.86	3.11
MW214	13/09/2018	Normal	B710405	-	0.32	0.28	1.7	0.1	1.2	<0.01	<0.01	0.22	0.43	0.085	0.051	0.089	<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	<0.05	**2.84**	4.42
MW214	13/09/2018	Normal	B710405-A	-	0.32	0.28	1.7	0.1	1.2	<0.01	<0.01	0.22	0.43	0.085	0.051	0.089	<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	<0.05	**2.84**	4.42
MW214	13/09/2018	Normal	B710405-B	-	0.2	0.2	1.3	0.09	0.96	<0.05	<0.05	<2.5	0.52	0.2	<0.05	0.07	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**2.21**	3.49
MW214	10/07/2019	Normal	EB1918202	-	<0.0005	<0.0005	0.0014	<0.0005	0.0042	-	<0.0005	<0.002	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0056	0.0067
MW214	30/10/2019	Normal	EB1928975	-	0.0012	0.0005	0.0016	<0.0005	0.0008	-	<0.0005	<0.002	0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0024	0.0054
MW214	5/03/2020	Normal	EB2006415	-	0.0012	0.001	0.0021	<0.0005	0.003	-	<0.0005	<0.002	0.0026	0.0015	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0051	0.0124
MW215	13/09/2018	Normal	B710405	-	0.61	0.59	3.3	0.26	3.3	<0.01	<0.01	0.18	1.2	0.24	0.19	0.34	<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	<0.05	**6.63**	10.3
MW215	13/09/2018	Normal	B710405-A	-	0.61	0.59	3.3	0.26	3.3	<0.01	<0.01	0.18	1.2	0.24	0.19	0.34	<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	<0.05	**6.63**	10.3
MW215	13/09/2018	Normal	B710405-B	-	0.59	0.4	2.8	0.2	2.8	<0.05	<0.05	<2.5	1.4	0.5	0.2	0.3	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**5.63**	9.22
MW215	10/07/2019	Normal	EB1918202	-	0.751	0.874	4.73	0.0864	0.786	-	<0.0005	0.053	1.04	0.184	0.133	0.145	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**5.52**	8.78
MW215	10/07/2019	Normal	EB1918202	-	1.07	1.09	5.31	0.14	1.07	-	-	0.4	1.85	0.45	0.17	0.18	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	**6.38**	11.7
MW215	30/10/2019	Normal	EB1928975	-	1.21	1.04	4.91	0.135	1.24	-	<0.0005	0.093	1.64	0.262	0.194	0.223	<0.0005	<0.0005	0.001	<0.0005	<0.0005	<0.0005	<0.001	0.003	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**6.15**	11
MW215	5/03/2020	Normal	EB2006415	-	0.352	0.416	2.48	0.16	2.18	-	<0.0016	0.021	0.67	0.145	0.109	0.198	<0.0016	<0.0016	0.0024	<0.0040	<0.0016	<0.0016	<0.002	0.007	<0.002	<0.002	<0.0016	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**4.66**	6.74
MW216	25/01/2019	Normal	EB1902057	-	0.16	0.16	0.83	0.06	1	-	<0.02	<0.1	0.56	0.27	0.23	0.26	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.83	3.58
MW216	25/01/2019	Field_D	EB1902057	-	0.16	0.15	0.82	0.06	0.99	-	<0.02	<0.1	0.54	0.27	0.23	0.25	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.81	3.47
MW216	26/01/2019	Interlab_D	637811	-	0.18	0.19	0.76	0.05	1.4	-	<0.01	0.14	0.56	0.28	0.24	0.25	<0.01	<0.01	0.02	<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	<0.05	-	**2.16**	4.07

Location Code	Date	Sample Type	Lab Report	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L	µg/L
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
MW216	11/07/2019	Normal	EB1918202	-	0.183	0.176	0.838	0.138	1.42	-	0.0006	0.291	0.939	1.06	0.36	0.426	0.0021	<0.0005	0.0665	<0.0005	<0.0005	<0.0005	<0.001	0.1	0.018	<0.001	0.0008	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**2.26**	6.02
MW216	31/10/2019	Normal	EB1928975	-	0.374	0.291	1.51	0.138	2.98	-	<0.0005	0.372	1.82	1.19	0.614	0.817	0.0039	<0.0005	0.144	<0.0005	<0.0005	<0.0005	<0.001	0.192	0.044	<0.001	0.0025	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**4.49**	10.5
MW216	5/03/2020	Normal	EB2006415	-	0.43	0.394	1.9	0.202	3.46	-	<0.0016	0.148	2.01	1.65	0.881	1.13	0.004	<0.0016	0.148	<0.0040	<0.0016	<0.0016	<0.002	0.269	0.06	<0.002	0.0027	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**5.36**	12.7
MW217	8/03/2017	Normal	EB1704721	-	1.32	0.76	3.5	0.18	6.86	-	<0.02	<0.1	0.99	0.3	0.15	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**10.36**	14.3
MW217	8/03/2017	Normal	EB1704721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10.4**	-
MW217	26/06/2018	Normal	B684401-A	-	0.61	0.5	3.7	0.14	2.7	<0.01	<0.01	0.11	0.78	0.27	0.11	0.23	<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	<0.05	**6.39**	9.25
MW217	26/06/2018	Normal	B684401-B	-	0.67	0.61	4.1	0.3	2.4	<0.05	<0.05	<2.5	1.7	0.56	0.2	0.3	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**6.52**	10.89
MW217	11/07/2019	Normal	EB1918202	-	0.448	0.45	3.33	0.121	2.24	-	<0.0005	0.039	0.631	0.176	0.0908	0.117	<0.0005	<0.0005	0.002	<0.0005	<0.0005	<0.0005	<0.001	0.072	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**5.57**	7.72
MW217	30/10/2019	Normal	EB1928975	-	0.625	0.459	3.45	0.152	2.29	-	0.0011	0.052	0.744	0.197	0.103	0.146	<0.0005	<0.0005	0.0023	<0.0005	<0.0005	<0.0005	<0.001	0.088	<0.001	<0.001	0.0006	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**5.74**	8.31
MW217	5/03/2020	Normal	EB2006415	-	0.575	0.593	3.33	0.164	2.96	-	<0.0016	0.021	0.615	0.194	0.0789	0.102	<0.0016	<0.0016	0.0021	<0.0040	<0.0016	<0.0016	<0.002	0.029	<0.002	<0.002	<0.0016	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**6.29**	8.66
MW218	9/03/2017	Normal	EB1704721	-	1.38	0.96	5.31	0.17	2.97	-	<0.02	<0.1	1.17	0.31	0.21	0.22	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**8.28**	12.7
MW221	7/03/2017	Normal	EB1704721	-	0.84	0.59	2.76	0.2	4.86	-	<0.02	<0.1	1.38	0.5	0.49	0.82	<0.02	<0.02	0.04	<0.05	<0.02	<0.02	<0.05	0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.62**	12.5
MW221	19/04/2018	Normal	EB1809957	-	0.46	0.41	2.35	0.2	3.51	-	<0.02	0.1	0.94	0.25	0.24	0.4	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.86**	8.86
MW221	20/10/2018	Normal	EB1825398	-	0.36	0.34	1.88	0.15	2.07	-	<0.02	0.2	0.86	0.29	0.27	0.39	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.95**	6.81
MW221	8/04/2019	Normal	EB1909359	-	0.36	0.35	2.04	0.14	2.2	-	<0.02	<0.1	0.93	0.29	0.27	0.41	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.24**	6.99
MW221	11/07/2019	Normal	EB1918202	-	0.257	0.267	1.48	0.117	1.6	-	<0.0005	0.045	0.617	0.197	0.177	0.248	<0.0005	<0.0005	0.0082	<0.0005	<0.0005	<0.0005	<0.001	0.009	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**3.08**	5.02
MW221	23/10/2019	Normal	EB1928436	-	0.32	0.35	2.07	0.14	1.65	-	<0.02	0.1	0.86	0.23	0.22	0.32	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.72**	6.26
MW221	30/10/2019	Normal	EB1928975	-	0.347	0.28	1.74	0.129	1.72	-	<0.0005	0.068	0.855	0.213	0.18	0.316	<0.0005	<0.0005	0.0113	<0.0005	<0.0005	<0.0005	<0.001	0.008	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**3.46**	5.87
MW221	5/03/2020	Normal	EB2006415	-	0.317	0.382	1.94	0.182	2.23	-	<0.0016	0.026	0.746	0.212	0.167	0.325	<0.0016	<0.0016	0.0088	<0.0040	<0.0016	<0.0016	<0.002	<0.002	<0.002	<0.002	<0.0016	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**4.17**	6.54
MW221	25/03/2020	Normal	EB2008691	-	0.39	0.42	2.3	0.18	2.25	-	<0.03	<0.2	0.95	0.28	0.23	0.35	<0.03	<0.03	<0.03	<0.08	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	-	**4.55**	7.35
MW221	19/10/2020	Normal	EB2027817	-	0.4	0.4	2.16	0.19	2.73	-	<0.02	0.18	1.04	0.3	0.28	0.42	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.89**	8.1
MW221	14/04/2021	Normal	EB2110967	-	0.35	0.34	1.69	0.12	1.71	-	<0.02	0.2	0.92	0.28	0.25	0.36	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.4**	6.22
MW222	7/03/2017	Interlab_D	AECO06_170314_3	-	0.5	-	3.3	-	12	-	<0.02	0.38	2.1	1.2	1.1	1.9	0.064	<0.02	0.54	<0.05	<0.05	<0.02	-	1.1	0.37	-	0.05	-	-	-	-	-	-	-	**15.3**	-
MW222	7/03/2017	Normal	EB1704721	-	1.45	1.07	6.95	0.81	22.7	-	<0.02	1.2	3.74	2.47	2.19	4.34	0.12	<0.02	1.34	<0.05	<0.02	<0.02	<0.05	1.41	0.9	<0.05	0.06	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**29.6**	50.8
MW222	7/03/2017	Normal	EB1704721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**29.65**	-
MW222	7/03/2017	Field_D	EB1704721	-	1.46	1.14	6.99	0.82	21.3	-	<0.02	1.2	3.9	2.54	2.36	4.29	0.12	<0.02	1.34	<0.05	<0.02	<0.02	<0.05	1.46	0.96	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**28.29**	49.9
MW222	7/03/2017	Field_D	EB1704721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**28.3**	-
MW222	29/09/2017	Normal	EB1720333	-	1.09	1.11	6.73	0.86	19.5	-	<0.02	0.2	5.98	2.69	4.24	4.66	0.09	<0.02	1.19	<0.05	<0.02	<0.02	<0.05	1.82	0.65	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**26.2**	50.8
MW222	19/04/2018	Normal	EB1809957	-	1.43	1.42	9.36	1.06	30.9	-	<0.02	1.3	5.5	2.96	2.78	4.52	0.12	<0.02	1.31	<0.05	<0.02	<0.02	<0.05	1.9	0.84	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**40.3**	65.4
MW222	26/06/2018	Normal	B684675-A	-	1.1	1	9.9	0.69	23	<0.01	<0.01	1	5.5	2.6	2.3	5.1	0.088	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	0.45	<0.01	0.035	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	**33.18**	54.57
MW222	26/06/2018	Normal	B684675-B	-	1.6	1.5	9.4	0.83	16	<0.05	<0.05	5.3	15	7.1	3.5	5	0.06	<0.05	0.79	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**25.1**	65.85
MW222	20/10/2018	Normal	EB1825398	-	1.73	1.54	10.5	1.2	26	-	<0.03	1.6	6.88	3.7	3.33	5.45	0.09	<0.02	1.29	<0.05	<0.02	<0.02	<0.05	2.25	0.83	<0.05	0.06	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**36.5**	66.4
MW222	8/04/2019	Normal	EB1909359	-	1.7	1.71	12.9	1.21	30	-	<0.02	1.8	7.64	3.68	3.51	6.32	0.06	<0.02	1.3	<0.05	<0.02	<0.02	<0.05	2.47	0.58	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**42.9**	74.9
MW222	11/07/2019	Normal	EB1918202	-	1.32	1.45	9.19	0.95	15.8	-	<0.0200	0.464	5.82	3.04	2.11	4.52	0.026	<0.0200	0.89	<0.0500	<0.0200	<0.0200	<0.020	1.72	0.266	<0.020	<0.0200	<0.050	<0.0200	<0.050	<0.050	<0.0200	<0.050	-	**25**	47.6
MW222	11/07/2019	Field_D	EB1918202	-	1.39	1.46	9.12	1.01	16.8	-	<0.0200	0.438	6.19	3.13	2.52	4.45	0.032	<0.0200	0.996	<0.0500	<0.0200	<0.0200	<0.020	2.09	0.29	<0.020	<0.0200	<0.050	<0.0200	<0.050	<0.050	<0.0200	<0.050	-	**25.9**	49.9
MW222	23/10/2019	Normal	EB1928436	-	1.66	1.88	13.6	1.02	14.8	-	<0.02	1.4	7.93	3.8	3.52	5.31	0.03	<0.02	0.89	<0.05	<0.02	<0.02	<0.05	1.88	0.22	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**28.4**	58
MW222	30/10/2019	Normal	EB1928975	-	1.75	1.71	9.31	0.973	9.19	-	0.0066	0.547	7.2	3.53	2.47	4.49	0.0194	<0.0005	0.641	<0.0005	<0.0005	<0.0005	0.002	1.61	0.173	<0.001	0.0186	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**18.5**	43.6
MW222	5/03/2020	Normal	EB2006415	-	1.63	2.09	10.4	1.48	16.2	-	<0.0016	0.307	7.21	3.77	2.98	4.93	0.0309	<0.0016	0.988	<0.0040	<0.0016	<0.0016	0.002	1.92	0.318	<0.002	0.037	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**26.6**	54.3
MW222	25/03/2020	Normal	EB2008691	-	1.81	1.89	12	1.35	19.4	-	<0.06	0.9	7.18	3.66	3.58	5.56	<0.06	<0.06	1.18	<0.16	<0.06	<0.06	<0.06	2.72	0.26	<0.06	<0.06	<0.16	<0.06	<0.16	<0.16	<0.06	<0.16	-	**31.4**	61.5
MW222	19/10/2020	Normal	EB2027817	-	1.67	1.95	12.1	1.17	14.6	-	<0.10	1.4	8.54	4.71	3.76	5.28	<0.10	<0.10	0.86	<0.25	<0.10	<0.10	<0.10	6.4	0.1	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	-	**26.7**	62.5
MW222	14/04/2021	Normal	EB2110967	-	2.17	2.34	14.4	1.51	23.6	-	<0.10	2.27	9.84	5.65	4.62	6.37	<0.10	<0.10	1.33	<0.25	<0.10	<0.10	<0.10	3.14	0.13	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	-	**38**	77.4
MW223	7/03/2017	Normal	EB1704721	-	1	0.98	5.98	0.98	25.8	-	<0.02	2.4	6.41	17.6	6.58	**10.1**	0.07	<0.02	4.4	<0.05	<0.02	<0.02	<0.05	11.5	0.88	<0.05	0.1	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**31.78**	94.8
MW223	7/03/2017	Normal	EB1704721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**31.8**	-
MW223	29/09/2017	Normal	EB1720333	-	0.71	0.79	5.27	0.54	11.3	-	<0.02	0.7	11.7	16	9.73	9.8	0.05	<0.02	1.75	<0.05	<0.02	<0.02	<0.05	6.25	0.49	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**16.6**	75.1
MW223	29/09/2017	Field_D	EB1720333	-	0.69	0.8	4.97	0.5	10.3	-	<0.02	0.5	11.6	14.8	10.8	9.8	0.04	<0.02	1.67	<0.05	<0.02	<0.02	<0.05	6.35	0.44	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**15.3**	73.3
MW223	22/10/2018	Normal	EB1825962	-	0.94	0.82	5.86	0.54	8.02	-	<0.02	4.1	11.4	19.2	5.74	8.24	0.04	<0.02	1.66	<0.05	<0.02	<0.02	<0.05	6.1	0.38	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**13.9**	73
MW223	8/04/2019	Normal	EB1909359	-	1	0.97	7.16	0.6	20.7	-	<0.02	4.6	13	21.7	6.8	9.1	0.06	<0.02	2.13	<0.05	<0.02	<0.02	<0.05	22.8	0.71	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**27.9**	111
MW223	11/07/2019	Normal	EB1918202	-	0.761	0.925	5.87	0.455	6.86	-	0.0028	1.22	8.73	16.3	4.16	6.07	0.0349	<0.0005	1.35	<0.0005	<0.0005	<0.0005	0.002	4.06	0.378	<0.001	0.0225	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**12.7**	57.2
MW223	23/10/2019	Normal	EB1928436	-	0.97	1.11	8.9	0.72	18.5	-	<0.02	3.7	11.5	22.7	6.44	8.5	0.1	<0.02	2.51	<0.05	<0.02	<0.02	<0.05	4.56	1.23	<0.05	0.06	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**27.4**	91.5
MW223	31/10/2019	Normal	EB1928975	-	0.965	1.07	7.05	0.591	7.46	-	0.0186	1.52	10.7	19.4	4.6	6.45	0.0401	<0.0005	1.49	<0.0005	<0.0005	<0.0005	0.005	3.92	0.296	<0.001	0.0272	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**14.5**	65.6
MW223	31/10/2019	Normal	EB1928975	-	-	-	9.19	0.78	8.65	-	<0.02	-	-	-	-	8.24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**17.8**	158
MW223	5/03/2020	Normal	EB2006415	-	1.04	1.1	7.99	0.69	8.66	-	<0.0016	0.829	11.8	22.8	5.94	6.91	0.0301	<0.0016	1.75	<0.0040	<0.0016	<0.0016	0.002	3.73	0.418	<0.002	0.0326	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**16.6**	76.8
MW223	5/03/2020	Normal	EB2006415	-	-	-	8.59	0.9	9.9	-	-	-	-	-	-	7.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**18.5**	146
MW223	5/03/2020	Field_D	EB2006415	-	1.23	0.913	6.17	0.677	7.69	-	<0.0016	0.926	8.8	18.7	5.44	6.03	0.0446	<0.0016	1.48	<0.0040	<0.0016	<0.0016	0.002	4.25	0.45	<0.002	0.0312	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**13.9**	62.8
MW223	25/03/2020	Normal	EB2008691	-	1.23	1.33	9.96	0.94	13.2	-	<0.06	2.6	11.8	22.8	6.59	8.57	<0.06	<0.06	2.13	<0.16	<0.06	<0.06	<0.06	5.56	0.47	<0.06	<0.06	<0.16	<0.06	<0.16	<0.16	<0.06	<0.16	-	**23.2**	87.2
MW223	19/10/2020	Normal	EB2027817	-	1.02	1.11	8.66	0.8	15	-	<0.04	5.8	13.3	28.7	7.69	8.44	0.06	<0.04	2.14	<0.10	<0.04	<0.04	<0.05	5	0.61	<0.05	0.05	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	-	**23.7**	98.4
MW223	14/04/2021	Normal	EB2110967	-	1.22	1.29	8.92	0.97	18.6	-	<0.07	6.4	15.1	37.4	10.2	9.72	<0.07	<0.07	2.24	<0.18	<0.07	<0.07	<0.07	6.65	0.74	<0.07	<0.07	<0.18	<0.07	<0.18	<0.18	<0.07	<0.18	-	**27.5**	119
MW224	7/03/2017	Normal	EB1704721	-	1.3	0.9	4.41	0.17	3.42	-	<0.02	1.6	2.24	3.76	1.02	1.48	0.07	<0.02	0.87	<0.05	<0.02	<0.02	<0.05	1.6	0.13	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.83**	23
MW224	23/05/2019	Normal	657987	0.12	0.48	0.67	3.1	0.12	2.7	<0.01	<0.01	1	1.9	2.9	0.9	1	0.07	<0.01	0.83	<0.01	<0.01	<0.01	<0.01	0.86	0.18	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	**5.8**	16.83
MW225	9/03/2017	Interlab_D	AECO06_170314_3	-	0.34	-	1.2	-	0.014	-	<0.02	<0.05	0.24	0.067	0.042	0.026	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	1.214	-
MW225	9/03/2017	Normal	EB1704721	-	0.92	0.63	1.8	<0.02	<0.01	-	<0.02	<0.1	0.45	0.1	0.07	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.8	4
MW225	9/03/2017	Field_D	EB1704721	-	0.91	0.64	1.99	<0.02	0.02	-	<0.02	<0.1	0.49	0.12	0.08	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.01**	4.32
MW226	8/03/2017	Normal	EB1704721	-	0.3	0.18	0.83	0.04	0.31	-	<0.02	<0.1	0.16	0.05	0.03	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.14	1.95
MW226	26/06/2018	Normal	B684675-A	-	0.31	0.27	0.78	0.04	0.38	<0.01	<0.01	<0.05	0.17	0.033	0.027	0.056	<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	<0.05	1.16	2.07
MW226	26/06/2018	Normal	B684675-B	-	0.3	0.3	0.93	<0.05	0.3	<0.05	<0.05	<2.5	0.2	0.08	<0.05	0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	1.24	2.25
MW226	11/07/2019	Normal	EB1918202	-	0.125	0.132	0.864	0.128	2.89	-	<0.0005	0.007	0.193	0.0424	0.0261	0.059	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.001	0.003	<0.001	<0.001	0.0011	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**3.75**	4.47
MW226	11/07/2019	Field_D	EB1918202	-	0.0582	0.0671	0.273	0.0067	0.0245	-	<0.0005	<0.002	0.0606	0.0145	0.0069	0.0082	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.298	0.521
MW226	30/10/2019	Normal	EB1928975	-	0.0577	0.0359	0.223	0.0048	0.0224	-	<0.0005	0.004	0.044	0.0107	0.0053	0.0063	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.245	0.414
MW226	5/03/2020	Normal	EB2006415	-	0.1	0.116	0.446	0.0186	0.0978	-	<0.0005	<0.002	0.0908	0.0266	0.0152	0.0169	<0.0005	<0.0005	0.0012	<0.0005	<0.0005	<0.0005	<0.001	0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.544	0.93
MW227	8/03/2017	Normal	EB1704721	-	0.16	0.15	0.62	0.04	0.62	-	<0.02	<0.1	0.28	0.12	0.11	0.16	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.24	2.26
MW228	7/03/2017	Normal	EB1704721	-	0.03	0.03	0.3	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.49	0.55
MW228	23/05/2019	Field_D	657987	<0.01	0.02	0.02	0.27	0.01	0.11	<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	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.38	0.43
MW228	23/05/2019	Normal	657987	<0.01	0.02	0.02	0.26	0.02	0.1	<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	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.36	0.42
MW228	23/05/2019	Interlab_D	EB1913620	-	0.02	0.02	0.31	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.43	0.47

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L	µg/L
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
Location Code	**Date**	**Sample Type**	**Lab Report**																																	
MW229	23/05/2014	Normal	EB1412619	-	-	-	-	-	56.6	-	-	-	-	-	-	0.91	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW229	23/04/2018	Normal	EB1810408	-	1.19	1.61	14.4	0.8	54.8	-	<0.02	0.2	2.58	0.46	0.28	0.6	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**69.2**	76.9
MW229	22/10/2018	Normal	EB1825962	-	0.99	1.38	8.58	0.58	17.4	-	<0.02	0.2	2.4	0.41	0.24	0.57	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**26**	32.8
MW229	9/04/2019	Normal	EB1909359	-	0.65	0.73	6.44	0.46	38.9	-	<0.02	0.2	1.5	0.25	0.15	0.42	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**45.3**	49.7
MW229	11/07/2019	Normal	EB1918202	-	0.382	0.452	3.82	0.264	17.8	-	<0.0200	<0.020	0.842	0.146	0.054	0.246	<0.0200	<0.0200	<0.0200	<0.0500	<0.0200	<0.0200	<0.020	<0.020	<0.020	<0.020	<0.0200	<0.050	<0.0200	<0.050	<0.050	<0.0200	<0.050	-	**21.6**	24
MW229	22/10/2019	Normal	EB1928436	-	0.61	0.74	6.24	0.43	24.5	-	<0.02	0.1	1.41	0.26	0.14	0.39	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**30.7**	34.8
MW229	22/10/2019	Field_D	EB1928436	-	0.59	0.78	6.56	0.44	26.2	-	<0.02	0.3	1.36	0.26	0.14	0.4	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**32.8**	37
MW229	22/10/2019	Interlab_D	RN1251384	-	0.54	0.62	5.7	0.32	30	<0.01	<0.01	0.15	1.2	0.23	0.12	0.33	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW229	30/10/2019	Normal	EB1928975	-	0.657	0.574	5.78	0.36	22.2	-	0.0056	0.052	1.43	0.222	0.134	0.371	0.0016	<0.0005	0.004	<0.0005	<0.0005	<0.0005	<0.001	0.007	<0.001	<0.001	0.0067	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**28**	31.8
MW229	5/03/2020	Normal	EB2006415	-	0.504	0.644	4.81	0.312	17.8	-	<0.0016	0.018	1.09	0.197	0.0955	0.297	<0.0016	<0.0016	0.0018	<0.0040	<0.0016	<0.0016	<0.002	<0.002	<0.002	<0.002	0.0114	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**22.6**	25.8
MW229	25/03/2020	Normal	EB2008691	-	0.64	0.78	6.42	0.46	28.4	-	<0.16	<0.8	1.39	0.26	<0.16	0.34	<0.16	<0.16	<0.16	<0.40	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.40	<0.16	<0.40	<0.40	<0.16	<0.40	-	**34.8**	38.7
MW229	20/10/2020	Normal	EB2027817	-	0.6	0.84	6.4	0.46	19.9	-	<0.07	<0.4	1.62	0.26	0.16	0.43	<0.07	<0.07	<0.07	<0.18	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.18	<0.07	<0.18	<0.18	<0.07	<0.18	-	**26.3**	30.7
MW229	20/04/2021	Normal	EB2110967	-	0.77	1	7.48	0.59	32.3	-	<0.05	<0.3	1.82	0.32	0.17	0.54	<0.05	<0.05	<0.05	<0.13	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.13	<0.05	<0.13	<0.13	<0.05	<0.13	-	**39.8**	45.1
MW230	7/03/2017	Normal	EB1704721	-	1.81	1.49	7.04	0.65	12.7	-	<0.02	2.5	7.72	8.89	5.7	8.16	0.05	<0.02	1.88	<0.05	<0.02	<0.02	<0.05	2.08	0.3	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**19.7**	61
MW230	7/03/2017	Normal	EB1704721	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**19.74**	-
MW230	22/03/2017	Normal	ES1709078	-	1.78	1.11	6.3	0.51	9.38	-	0.007	5.97	9.22	9.13	3.32	4.92	0.03	<0.002	0.86	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	-	**15.68**	52.6
MW230	22/03/2017	Normal	ES1709078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15.7**	-
MW230	16/04/2018	Normal	EB1809957	-	0.94	0.98	5.7	0.44	9.9	-	<0.02	3.5	9.44	14.4	6.09	5.56	0.08	<0.02	1.99	<0.05	<0.02	<0.02	<0.05	3.08	0.47	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**15.6**	62.6
MW230	28/06/2018	Normal	B685572-A	-	0.86	0.8	5.1	0.46	4.8	<0.01	<0.01	2.9	13	9.4	5.2	5.9	0.038	<0.01	0.96	<0.01	<0.01	<0.01	<0.01	0.17	0.26	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	**9.94**	51.93
MW230	28/06/2018	Normal	B685572-B	-	1	0.9	5.2	0.57	4.3	<0.05	<0.05	12	17	21	5.5	5.1	<0.05	<0.05	0.96	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**9.52**	72.85
MW230	20/10/2018	Normal	EB1825398	-	0.96	0.83	4.67	0.43	8.28	-	<0.02	3.2	8.87	15.8	4.99	4.55	0.07	<0.02	1.12	<0.05	<0.02	<0.02	<0.05	2.41	0.5	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**13**	56.7
MW230	25/10/2018	Normal	EB1826186	-	0.0539	0.0468	0.271	0.0376	0.974	-	0.0007	0.024	0.187	0.164	0.101	0.123	0.0015	<0.0005	0.0218	<0.0005	<0.0005	<0.0005	<0.001	0.034	0.006	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	1.24	2.05
MW230	8/04/2019	Normal	EB1909359	-	0.99	0.94	5.91	0.54	8.12	-	<0.02	4	9.65	18.3	6.55	6.1	0.02	<0.02	0.76	<0.05	<0.02	<0.02	<0.05	2.94	0.19	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**14**	65
MW230	23/05/2019	Normal	657987	0.11	0.93	1.1	6.2	0.87	8.6	<0.01	<0.01	4.1	11	18	6.2	5.7	0.02	<0.01	0.86	<0.01	<0.01	<0.01	<0.01	1.5	0.13	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	**14.8**	65.32
MW230	11/07/2019	Normal	EB1918202	-	0.688	0.82	5.1	0.42	5.32	-	<0.0005	0.845	7.77	12.2	3.28	3.72	0.0156	<0.0005	0.527	<0.0005	<0.0005	<0.0005	0.003	1.64	0.11	<0.001	0.0115	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**10.4**	42.5
MW230	23/10/2019	Normal	EB1928436	-	0.92	0.98	5.91	0.46	4.12	-	<0.02	2.8	9.48	16.2	5.46	4.6	<0.02	<0.02	0.57	<0.05	<0.02	<0.02	<0.05	2.05	0.08	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**10**	53.6
MW230	30/10/2019	Normal	EB1928975	-	0.94	0.978	5.49	0.612	6.53	-	0.002	1.15	8.91	13.7	4.2	4.47	0.0183	<0.0005	0.672	<0.0005	<0.0005	<0.0005	0.004	1.92	0.117	<0.001	0.0068	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**12**	49.7
MW230	31/10/2019	Field_D	EB1928975	-	0.696	0.667	3.59	0.411	4.7	-	0.0008	1.08	6.3	9.01	2.85	3.01	0.0193	<0.0005	0.492	<0.0005	<0.0005	<0.0005	0.003	1.34	0.082	<0.001	0.0151	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**8.29**	34.3
MW230	11/03/2020	Normal	EB2006832	-	1.14	0.867	4.25	0.478	4.76	-	<0.0016	0.649	8.32	15.2	4.92	3.89	0.0154	<0.0016	0.494	<0.0040	<0.0016	<0.0016	0.003	1.94	0.088	<0.002	0.0134	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**9.01**	47
MW230	25/03/2020	Normal	EB2008691	-	1.1	1.16	6.61	0.7	7.74	-	<0.03	1.9	9.34	15.5	5.35	4.94	<0.03	<0.03	0.7	<0.08	<0.03	<0.03	<0.05	2.61	0.11	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	-	**14.4**	57.8
MW230	19/10/2020	Normal	EB2027817	-	1.11	1.11	6.72	0.77	8.61	-	<0.04	5	11.9	22.9	6.27	5.32	<0.04	<0.04	0.65	<0.10	<0.04	<0.04	<0.05	2.36	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	-	**15.3**	72.7
MW230	14/04/2021	Normal	EB2110967	-	1.11	1.2	6.31	0.78	11	-	<0.04	4.8	12.3	25.3	7.22	5.87	<0.04	<0.04	0.94	<0.09	<0.04	<0.04	<0.05	2.93	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	-	**17.3**	79.8
MW230	14/04/2021	Field_D	EB2110967	-	1.02	1.01	5.45	0.6	8.4	-	<0.04	5.1	12.8	25.2	6.82	5.96	<0.04	<0.04	0.86	<0.09	<0.04	<0.04	<0.05	2.76	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	-	**13.8**	76
MW230	14/04/2021	Interlab_D	RN1312932	-	0.94	0.83	4.4	0.49	6.4	<0.01	<0.01	3.7	8.3	16	4.8	3.6	0.017	<0.01	0.72	<0.02	<0.02	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW231	27/07/2015	Field_D	ES1527144	-	-	-	-	-	5.49	-	-	-	-	-	-	1.23	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW231	27/07/2015	Interlab_D	466639	-	-	-	-	-	0.8	-	-	-	-	-	-	0.74	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW231	27/07/2015	Normal	ES1527144	-	-	-	-	-	5.34	-	-	-	-	-	-	1.13	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW231	20/10/2016	Normal	EB1625184	-	-	-	13	-	7.87	-	-	-	-	-	-	1.22	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	**20.87**	-
MW232	14/03/2017	Normal	EB1705326	-	0.92	0.91	5.87	0.27	10.2	-	<0.02	0.6	3.27	2.05	2.25	2.95	0.29	<0.02	0.51	<0.05	<0.02	<0.02	<0.05	0.98	2.21	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**16.1**	33.3
MW232	14/03/2017	Normal	EB1705326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW232	14/03/2017	Normal	ES1709078	-	0.9	0.89	4.24	0.27	8.54	-	0.004	12.9	10.2	7.77	3.83	2.9	0.51	<0.002	0.65	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	-	**12.78**	53.7
MW232	14/03/2017	Normal	ES1709078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12.8**	-
MW232	16/04/2018	Normal	EB1809957	-	0.1	0.11	0.99	0.17	8.82	-	<0.02	0.5	0.67	1.21	0.62	0.58	0.38	<0.02	0.47	<0.05	<0.02	<0.02	<0.05	0.22	2.16	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**9.81**	17
MW232	24/10/2018	Interlab_D	AECO06_181030_1	-	0.14	0.19	2	0.34	11	<0.01	<0.01	0.39	0.84	0.94	0.75	1	0.29	<0.01	0.38	<0.02	<0.02	<0.01	<0.01	0.15	<0.01	<0.01	0.019	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW232	24/10/2018	Normal	EB1825962	-	0.13	0.24	2.18	0.29	11.7	-	<0.02	0.4	0.94	1.02	0.79	1.11	0.3	<0.02	0.4	<0.05	<0.02	<0.02	<0.05	0.16	1.78	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**13.9**	21.5
MW232	24/10/2018	Field_D	EB1825962	-	0.12	0.21	1.94	0.25	11.6	-	<0.02	0.3	0.81	0.84	0.71	0.95	0.27	<0.02	0.35	<0.05	<0.02	<0.02	<0.05	0.14	1.48	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**13.5**	20
MW232	4/04/2019	Normal	EB1908876	-	0.2	0.19	1.49	0.24	18	-	<0.02	0.3	0.72	0.65	0.47	0.76	0.4	<0.02	0.52	<0.05	<0.02	<0.02	<0.05	0.24	2.65	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**19.5**	26.8
MW232	23/10/2019	Normal	EB1928436	-	0.32	0.45	3.33	0.18	21.2	-	<0.02	0.7	2.05	3.31	1.3	1.28	0.97	<0.02	0.43	<0.05	<0.02	<0.02	<0.05	0.2	6.54	<0.05	0.06	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**24.5**	42.3
MW232	1/04/2020	Normal	EB2009332	-	0.33	0.37	2.53	0.33	12.4	-	<0.02	0.7	1.52	1.86	1.1	1.11	0.4	<0.02	0.38	<0.05	<0.02	<0.02	<0.05	0.2	1.7	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**14.9**	24.9
MW232	20/10/2020	Normal	EB2027817	-	0.23	0.32	2.82	0.28	14.3	-	<0.04	0.8	1.56	2.31	1.08	1.16	0.45	<0.04	0.38	<0.09	<0.04	<0.04	<0.05	0.18	1.78	<0.05	0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	-	**17.1**	27.7
MW232	14/04/2021	Normal	EB2110967	-	0.33	0.49	3.52	0.44	21.2	-	<0.04	0.7	1.71	2.34	1.2	1.42	0.42	<0.04	0.37	<0.10	<0.04	<0.04	<0.05	0.24	2.55	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	-	**24.7**	36.9
MW233	13/03/2017	Normal	EB1705014	-	0.3	0.28	0.85	<0.02	0.25	-	<0.02	<0.1	0.28	0.04	0.03	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.1	2.04
MW233	25/04/2018	Normal	EB1810408	-	0.21	0.17	0.84	<0.02	0.1	-	<0.02	<0.1	0.17	0.05	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.94	1.61
MW233	23/10/2018	Normal	EB1825962	-	0.56	0.46	2.32	0.03	0.61	-	<0.02	0.3	1.19	0.36	0.17	0.17	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.93**	6.17
MW233	17/04/2019	Normal	EB1910290	-	0.24	0.21	1.17	<0.02	0.47	-	<0.02	<0.1	0.43	0.15	0.06	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.64	2.82
MW233	24/10/2019	Normal	EB1928436	-	0.1	0.1	1.11	0.05	0.63	-	<0.02	<0.1	0.16	0.06	0.04	0.22	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.74	2.47
MW233	26/03/2020	Normal	EB2008691	-	0.2	0.18	0.82	<0.02	0.45	-	<0.02	<0.1	0.25	0.06	0.04	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.27	2.05
MW233	21/10/2020	Normal	EB2027817	-	0.21	0.18	1	<0.02	0.27	-	<0.02	<0.10	0.19	<0.06	0.04	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.27	1.94
MW233	17/04/2021	Normal	EB2110967	-	0.21	0.17	0.96	0.03	0.54	-	<0.02	<0.10	0.21	0.06	0.04	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.5	2.29
MW235	14/03/2017	Normal	EB1705326	-	5.48	3.92	10.4	0.24	6.49	-	<0.02	0.6	6.49	1.15	0.31	0.26	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**16.9**	35.3
MW235	14/03/2017	Normal	EB1705326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW235	24/10/2018	Normal	EB1825962	-	4.86	4.59	11.2	0.25	5.59	-	<0.02	1.3	7.88	1.67	0.5	0.36	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**16.8**	38.2
MW235	3/04/2019	Normal	EB1908876	-	5.21	4.74	14.8	0.27	5.32	-	<0.02	1.5	8.63	1.8	0.63	0.47	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**20.1**	43.4
MW235	23/10/2019	Normal	EB1928436	-	6.06	6.66	23	0.32	4.83	-	<0.02	1.4	11.1	2.32	1.13	0.91	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**27.8**	57.7
MW235	1/04/2020	Normal	EB2009332	-	4.9	4.67	16.4	0.35	4.81	-	<0.02	1.5	9.32	2.11	0.79	0.54	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**21.2**	45.4
MW235	1/04/2020	Field_D	EB2009332	-	4.89	4.56	16.7	0.37	4.78	-	<0.02	1.6	9.58	2.08	0.8	0.56	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**21.5**	45.9
MW235	1/04/2020	Interlab_D	RN1270680	-	4.1	3.3	12	0.24	3	<0.01	<0.01	1.7	7.4	1.5	0.61	0.49	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW235	20/10/2020	Normal	EB2027817	-	4.86	4.77	13.7	0.28	4.38	-	<0.04	1.4	9.48	1.97	0.67	0.54	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	-	**18.1**	42
MW235	14/04/2021	Normal	EB2110967	-	6.73	7.34	20.1	0.4	5.29	-	<0.04	1.8	12.8	2.72	1.26	1.04	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.04	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	-	**25.4**	59.5
MW236	14/03/2017	Normal	EB1705326	-	6.35	4.18	19	0.89	9.64	-	<0.02	0.9	6.82	1.18	0.66	1.35	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**28.6**	51
MW236	14/03/2017	Normal	EB1705326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW236	14/03/2017	Normal	ES1709078	-	4.65	3.28	11.3	0.87	8.03	-	<0.002	4.27	10.2	3.28	0.59	1.28	<0.002	<0.002	0.004	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	-	**19.3**	47.8
MW236	14/03/2017	Normal	ES1709078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**19.33**	-
MW236	17/04/2018	Normal	EB1809957	-	4.83	3.34	14.8	0.76	9.6	-	<0.02	1.3	5.82	1.25	0.62	1.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**24.4**	43.4

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																			0.07	
PFAS NEMP 2020 Recreational Water													**10**																			**2**	

Location Code	Date	Sample Type	Lab Report																															
MW236	17/04/2018	Field_D	EB1809957	-	4.8	3.22	15.1	0.77	9.8	-	<0.02	1.2	5.85	1.22	0.61	1.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**24.9**	43.6
MW236	17/04/2018	Interlab_D	AECO06_180424	-	3.1	2	9.8	0.49	5.8	<0.01	<0.01	1.1	4.1	0.95	0.47	0.77	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW236	24/10/2018	Normal	EB1825962	-	3.99	3.51	15	0.84	8.94	-	<0.02	1.1	5.94	1.25	0.7	1.43	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**23.9**	42.7
MW236	3/04/2019	Normal	EB1908876	-	4.16	3.22	15.1	0.74	7.82	-	<0.02	1.3	5.85	1.25	0.67	1.27	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**22.9**	41.4
MW236	23/10/2019	Normal	EB1928436	-	3.26	2.62	15.4	0.6	6.61	-	<0.02	0.8	4.66	0.96	0.54	1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**22**	36.4
MW236	1/04/2020	Normal	EB2009332	-	1.76	1.47	7.17	0.47	4.98	-	0.02	0.8	2.54	0.58	0.35	0.86	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**12.2**	21
MW236	20/10/2020	Normal	EB2027817	-	3.43	2.3	8.96	0.56	6.29	-	<0.02	1.21	5.06	1.15	0.49	0.89	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**15.2**	30.3
MW236	14/04/2021	Normal	EB2110967	-	3.56	2.64	9.33	0.52	5.08	-	<0.02	0.98	4.55	1.09	0.48	0.75	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**14.4**	29
MW240	14/03/2017	Normal	EB1705326	-	0.42	0.39	2.22	0.07	0.6	-	<0.02	<0.1	0.5	0.08	0.05	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.82**	4.43
MW240	14/03/2017	Normal	EB1705326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW241	14/03/2017	Normal	EB1705326	-	0.37	0.34	2.57	0.14	2.28	-	<0.02	<0.1	0.45	0.13	0.09	0.19	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.85**	6.56
MW241	14/03/2017	Normal	EB1705326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW241	17/04/2018	Normal	EB1809957	-	2.93	3.27	16	1.35	54.6	-	<0.02	0.8	3.86	1.31	0.78	1.45	<0.02	<0.02	0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**70.6**	86.4
MW241	24/10/2018	Normal	EB1825962	-	0.2	0.22	1.88	0.13	4.7	-	<0.02	<0.1	0.3	0.12	0.07	0.16	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.58**	7.78
MW241	4/04/2019	Normal	EB1908876	-	0.19	0.22	1.81	0.12	4.28	-	<0.02	0.1	0.29	0.11	0.07	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.09**	7.34
MW241	4/04/2019	Field_D	EB1908876	-	0.19	0.2	1.66	0.1	3.57	-	<0.02	<0.1	0.29	0.1	0.06	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.23**	6.28
MW241	4/04/2019	Interlab_D	RN1229258	-	0.19	0.17	1.6	0.083	4.4	<0.01	<0.01	0.12	0.24	0.1	0.057	0.13	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW241	23/10/2019	Normal	EB1928436	-	0.19	0.18	1.53	0.08	2.9	-	<0.02	<0.1	0.26	0.1	0.06	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.43**	5.41
MW241	1/04/2020	Normal	EB2009332	-	0.2	0.19	1.57	0.12	3.93	-	<0.02	0.1	0.25	0.1	0.07	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.5**	6.67
MW241	20/10/2020	Normal	EB2027817	-	0.17	0.16	1.42	0.09	2.64	-	<0.02	<0.1	0.24	0.08	0.06	0.13	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.06**	4.99
MW241	14/04/2021	Normal	EB2110967	-	0.13	0.16	1.44	0.11	3.77	-	<0.02	<0.1	0.21	0.09	0.06	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.21**	6.11
MW242	2/02/2016	Normal	EB1603041	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW242	2/02/2016	Normal	EB1603057	-	0.26	-	1.67	-	1.81	-	<0.02	-	0.38	-	0.06	0.1	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**3.48**	-
MW242	2/02/2016	Field_D	EB1603057	-	0.25	-	1.83	-	2.14	-	<0.02	-	0.3	-	0.07	0.13	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**3.97**	-
MW242	2/02/2016	Interlab_D	488339	-	0.17	-	0.45	-	<0.04	-	<0.04	<0.2	0.27	0.06	0.04	0.07	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.2	<0.04	-	<0.2	<0.2	-	-	<0.2	-	-	-	0.45	-
MW242	3/05/2016	Normal	EB1611805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW242	3/05/2016	Normal	EB1611808	-	-	-	-	-	1.45	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW242	3/05/2016	Field_D	EB1611805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW242	3/05/2016	Field_D	EB1611808	-	-	-	-	-	0.84	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW242	3/05/2016	Interlab_D	499665	-	-	-	-	-	0.3	-	-	-	-	-	-	0.09	-	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-	-
MW242	3/05/2016	Interlab_D	499668	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW242	28/03/2017	Normal	EB1706327	-	0.22	0.22	1.73	0.08	1.62	-	<0.02	<0.1	0.28	0.05	0.04	0.12	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.35**	4.36
MW242	2/05/2018	Normal	EB1810943	-	0.16	0.18	1.21	0.07	1.78	-	<0.02	<0.1	0.3	0.08	0.05	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.99**	3.91
MW242	29/11/2018	Normal	EB1829217	-	0.15	0.14	1.35	0.06	1.53	-	<0.02	<0.1	0.33	0.09	<0.02	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.88**	3.76
MW242	15/04/2019	Normal	EB1910095	-	0.15	0.17	1.24	0.06	1.22	-	<0.02	<0.1	0.3	0.07	0.04	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.46**	3.34
MW242	22/10/2019	Normal	EB1928436	-	1.9	2.02	15.1	0.56	4.63	-	<0.02	0.3	3.36	0.7	0.52	0.95	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**19.7**	30
MW242	26/03/2020	Normal	EB2008691	-	<0.09	<0.09	0.19	<0.09	0.29	-	<0.09	<0.5	<0.09	0.14	<0.09	<0.09	<0.09	<0.09	<0.09	<0.23	<0.09	<0.09	<0.09	0.33	<0.09	<0.09	<0.09	<0.23	<0.09	<0.23	<0.23	<0.09	<0.23	-	0.48	0.95
MW242	23/10/2020	Normal	EB2027817	-	0.03	<0.02	0.12	<0.02	0.21	-	<0.02	<0.1	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.33	0.5
MW242	20/04/2021	Normal	EB2110967	-	0.07	0.08	0.47	0.03	0.7	-	<0.02	<0.1	0.12	0.04	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.17	1.57
MW245	2/02/2016	Normal	EB1603057	-	-	-	-	-	0.09	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW245	10/02/2016	Normal	EB1603672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW245	3/05/2016	Normal	EB1611805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW245	3/05/2016	Normal	EB1611808	-	0.03	0.02	0.18	<0.02	0.08	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.26	<0.01
MW245	28/03/2017	Normal	EB1706327	-	0.07	0.07	0.49	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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.67	0.91
MW245	2/05/2018	Normal	EB1810943	-	0.04	0.05	0.34	<0.02	0.17	-	<0.02	<0.1	0.07	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.51	0.7
MW245	29/11/2018	Normal	EB1829217	-	0.04	0.04	0.29	<0.02	0.17	-	<0.02	<0.1	0.07	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.46	0.63
MW245	29/11/2018	Field_D	EB1829217	-	0.04	0.04	0.34	<0.02	0.16	-	<0.02	<0.1	0.07	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.5	0.65
MW245	17/04/2019	Normal	EB1910290	-	0.04	0.04	0.3	<0.02	0.13	-	<0.02	<0.1	0.07	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.43	0.59
MW245	23/10/2019	Normal	EB1928436	-	0.04	0.04	0.28	<0.02	0.1	-	<0.02	<0.1	0.06	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.38	0.52
MW245	26/03/2020	Normal	EB2008691	-	0.04	0.04	0.31	<0.03	0.18	-	<0.03	<0.2	0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.08	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	-	0.49	0.63
MW245	20/10/2020	Normal	EB2027817	-	0.04	0.04	0.22	<0.02	0.13	-	<0.02	<0.1	0.06	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.35	0.5
MW245	20/10/2020	Field_D	EB2027817	-	0.04	0.04	0.23	<0.02	0.13	-	<0.02	<0.1	0.06	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.36	0.51
MW245	20/10/2020	Interlab_D	RN1292789	-	0.028	0.027	0.19	<0.01	0.11	<0.01	<0.01	<0.05	0.042	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW245	20/04/2021	Normal	EB2110967	-	0.03	0.04	0.2	<0.02	0.12	-	<0.02	<0.1	0.06	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.32	0.46
MW247	16/03/2017	Normal	EB1705326	-	0.51	0.35	1.26	0.02	0.33	-	<0.02	<0.1	0.66	0.14	0.03	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.59	3.33
MW247	16/03/2017	Normal	EB1705326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW249	16/03/2017	Normal	EB1705326	-	0.66	0.66	3.75	0.04	0.07	-	<0.02	<0.1	0.98	0.2	0.09	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.82**	6.54
MW249	16/03/2017	Normal	EB1705326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW249	17/04/2018	Normal	EB1809957	-	0.64	0.63	3.03	0.05	0.12	-	<0.02	0.1	1.02	0.26	0.1	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.15**	6.03
MW249	25/10/2018	Normal	EB1825962	-	0.6	0.66	2.39	0.03	0.04	-	<0.02	0.2	1.2	0.3	0.11	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.43**	5.58
MW249	3/04/2019	Normal	EB1908876	-	0.7	0.8	3.5	0.05	0.08	-	<0.02	0.2	1.3	0.34	0.13	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.58**	7.19
MW249	23/10/2019	Normal	EB1928436	-	0.6	0.72	3.12	0.04	0.09	-	<0.02	0.1	1.16	0.3	0.13	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.21**	6.33
MW249	1/04/2020	Normal	EB2009332	-	0.82	1.04	3.92	0.06	0.12	-	<0.02	0.3	1.47	0.42	0.2	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.04**	8.46
MW249	1/04/2020	Field_D	EB2009332	-	0.86	0.98	3.62	0.06	0.12	-	<0.02	0.3	1.52	0.42	0.2	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.74**	8.19
MW249	1/04/2020	Interlab_D	RN1270680	-	0.73	0.74	2.9	0.025	0.068	<0.01	<0.01	0.24	1.4	0.39	0.12	0.077	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW249	20/10/2020	Normal	EB2027817	-	0.82	0.93	3.95	0.05	0.13	-	<0.02	0.2	1.62	0.41	0.17	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.08**	8.38
MW249	14/04/2021	Normal	EB2110967	-	0.71	0.94	4.04	0.06	0.15	-	<0.02	0.2	1.41	0.43	0.17	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.19**	8.22
MW250	5/11/2015	Normal	EB1534037	-	0.05	-	0.2	-	0.06	-	<0.02	-	0.05	-	<0.02	<0.01	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**0.26**	-
MW250	5/11/2015	Field_D	EB1534037	-	-	-	-	-	0.04	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW250	5/11/2015	Interlab_D	480012	-	0.04	-	0.2	-	0.09	-	<0.01	<0.05	0.05	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	<0.05	-	-	<0.05	-	-	-	0.29	-
MW250	16/03/2017	Normal	EB1705326	-	1.24	1.22	10.8	0.31	2.73	-	<0.02	<0.1	1.63	0.33	0.21	0.48	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**13.5**	19
MW250	16/03/2017	Normal	EB1705326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW252	14/03/2017	Normal	EB1705326	-	0.46	0.46	4.43	0.34	11.7	-	<0.02	<0.1	0.46	0.13	0.12	0.4	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**16.1**	18.5
MW252	14/03/2017	Normal	EB1705326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																			0.07	
PFAS NEMP 2020 Recreational Water													**10**																			**2**	

Location Code	Date	Sample Type	Lab Report																																
MW252	14/03/2017	Normal	ES1709078	-	0.4	0.42	2.7	0.32	8.15	-	<0.002	0.7	1.8	0.55	0.13	0.38	<0.002	<0.002	0.01	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	-	**10.8**	15.6
MW252	14/03/2017	Normal	ES1709078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10.85**	-
MW252	17/04/2018	Normal	EB1809957	-	0.25	0.26	2.01	0.16	6.56	-	<0.02	0.1	0.31	0.12	0.08	0.17	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**8.57**	10
MW252	24/10/2018	Normal	EB1825962	-	2.1	2.74	12.9	0.94	23.8	-	<0.02	0.6	3.66	1.12	0.66	1.09	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**36.7**	49.6
MW252	3/04/2019	Normal	EB1908876	-	0.61	0.63	3.42	0.22	8.14	-	<0.02	0.3	0.94	0.37	0.16	0.29	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**11.6**	15.1
MW252	23/10/2019	Normal	EB1928436	-	1.65	2.03	13.2	0.76	26.3	-	<0.02	0.4	2.8	0.91	0.56	1.02	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**39.5**	49.7
MW252	1/04/2020	Normal	EB2009332	-	1.4	1.99	9.78	1.07	20.4	-	<0.02	0.5	2.14	0.74	0.56	0.94	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**30.2**	39.6
MW252	20/10/2020	Normal	EB2027817	-	1.16	1.12	6.55	0.46	16.3	-	<0.10	<0.50	1.55	0.65	0.38	0.68	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	-	**22.8**	28.8
MW252	14/04/2021	Normal	EB2110967	-	2.41	2.7	11.5	0.64	17	-	<0.10	0.83	3.43	1.55	0.76	0.97	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	-	**28.5**	41.8
MW253	14/03/2017	Normal	EB1705326	-	4.18	4.19	26.2	1.48	14.2	-	<0.02	0.4	4.67	0.72	0.58	1.23	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**40.4**	57.8
MW253	14/03/2017	Normal	EB1705326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW253	14/03/2017	Normal	ES1709078	-	2.46	2.62	14.8	1.07	9.32	-	<0.002	1.33	4.56	1.02	0.49	0.94	<0.002	<0.002	0.004	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	-	**24.1**	38.6
MW253	14/03/2017	Normal	ES1709078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**24.12**	-
MW253	22/05/2018	Normal	EB1812717	-	7.92	7.56	35.8	1.83	16.9	-	<0.02	1.1	11.5	1.69	1.29	1.5	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**52.7**	87.1
MW253	22/05/2018	Field_D	EB1812717	-	9.94	8.53	35.9	2.2	17.5	-	<0.02	1.2	11.9	1.84	1.48	1.63	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**53.4**	92.1
MW253	22/05/2018	Interlab_D	AECO06_180530_1	-	4.7	4.8	25	1.4	18	<0.01	<0.01	0.98	6.2	1.2	0.68	1	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.05	<0.02	<0.05	-	-	-
MW253	25/10/2018	Normal	EB1825962	-	6.93	10.3	53.1	4.44	27.7	-	<0.02	1.2	8.43	1.83	1.52	2.8	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**80.8**	118
MW253	4/04/2019	Normal	EB1908876	-	3.87	5.09	30.7	2.02	18.4	-	<0.02	0.8	5.81	1.04	0.79	1.45	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**49.1**	70
MW253	23/10/2019	Normal	EB1928436	-	8.26	12.7	76.6	4.36	44.3	-	<0.02	1.2	13.8	2.22	1.72	3.33	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**121**	168
MW253	1/04/2020	Normal	EB2009332	-	3.64	3.9	30.4	3.18	31.8	-	0.28	1.2	5.38	1.36	0.91	1.84	0.07	<0.02	0.05	<0.05	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	0.32	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**62.2**	84.4
MW253	20/10/2020	Normal	EB2027817	-	1.75	1.97	13.7	0.94	18.4	-	<0.04	0.6	2.71	0.72	0.34	0.88	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	0.12	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	-	**32.1**	42.1
MW253	14/04/2021	Normal	EB2110967	-	1.26	1.66	10.4	0.75	14.6	-	<0.02	0.4	1.88	0.51	0.28	0.52	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**25**	32.3
MW254	14/03/2017	Normal	EB1705326	-	0.96	0.58	2.26	0.06	0.89	-	<0.02	<0.1	1.45	0.3	0.11	0.3	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.15**	6.91
MW254	14/03/2017	Normal	EB1705326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW254	17/04/2018	Normal	EB1809957	-	0.68	0.43	1.41	0.06	0.75	-	<0.02	0.2	1.11	0.28	0.09	0.22	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.16**	5.23
MW254	24/10/2018	Normal	EB1825962	-	0.46	0.37	1.15	0.03	0.44	-	<0.02	0.2	0.9	0.22	0.06	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.59	3.98
MW254	4/04/2019	Normal	EB1908876	-	1.19	0.98	8.52	0.32	16.7	-	<0.02	0.6	2.2	0.65	0.18	0.56	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**25.2**	32
MW254	23/10/2019	Normal	EB1928436	-	0.73	0.47	2.01	0.04	1.88	-	<0.02	0.2	1.38	0.37	0.09	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.89**	7.38
MW254	1/04/2020	Normal	EB2009332	-	2.24	1.6	12.6	0.54	19.2	-	0.03	1.3	3.78	1.26	0.36	0.66	0.04	<0.02	0.04	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**31.8**	43.8
MW254	20/10/2020	Normal	EB2027817	-	1.82	1.62	11.2	0.27	11.4	-	<0.10	0.58	3.93	1.08	0.33	0.65	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.13	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	-	**22.6**	33
MW254	14/04/2021	Normal	EB2110967	-	1.28	1.17	7.77	0.16	9.32	-	<0.02	0.7	2.61	0.9	0.22	0.4	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**17.1**	24.6
MW255	4/11/2015	Normal	EB1534037	-	-	-	-	-	0.03	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW255	3/02/2016	Normal	EB1603057	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW255	4/05/2016	Normal	EB1611808	-	-	-	-	-	0.02	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW255	21/03/2017	Normal	EB1705900	-	<0.02	<0.02	0.11	<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	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.14**	0.14
MW255	25/04/2018	Normal	EB1810408	-	<0.02	<0.02	0.13	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.19**	0.19
MW255	18/10/2018	Normal	EB1826398	-	0.02	<0.02	0.11	<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	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.14**	0.16
MW255	11/04/2019	Normal	EB1909687	-	<0.02	<0.02	0.12	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.16**	0.16
MW255	11/04/2019	Interlab_D	RN1230420	-	0.021	0.021	0.12	<0.01	0.052	<0.01	<0.01	<0.05	0.016	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.017	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.02	<0.05	-	-	-
MW255	23/10/2019	Normal	EB1928436	-	0.02	0.02	0.14	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.18**	0.22
MW255	26/03/2020	Normal	EB2008693	-	0.02	0.02	0.14	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.2**	0.26
MW255	21/10/2020	Normal	EB2027817	-	<0.02	0.02	0.12	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.19**	0.23
MW255	13/04/2021	Normal	EB2110967	-	<0.02	0.02	0.11	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.15**	0.17
MW255	13/04/2021	Field_D	EB2110967	-	<0.02	0.02	0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.14**	0.16
MW255	13/04/2021	Interlab_D	RN1312932	-	0.02	0.019	0.11	<0.01	0.042	<0.01	<0.01	<0.05	0.014	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW256	4/11/2015	Normal	EB1534037	-	-	-	-	-	0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW256	3/02/2016	Normal	EB1603057	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW256	4/05/2016	Normal	EB1611808	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW256	21/03/2017	Interlab_D	AECO06_170328	-	0.011	-	0.04	-	<0.01	-	<0.02	<0.05	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	0.04	-
MW256	21/03/2017	Normal	EB1705900	-	<0.02	<0.02	0.05	<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	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.05	0.05
MW256	21/03/2017	Field_D	EB1705900	-	<0.02	<0.02	0.05	<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	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.05	0.05
MW257	4/11/2015	Normal	EB1534037	-	0.08	-	0.29	-	0.31	-	<0.02	-	0.07	-	<0.02	<0.01	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**0.6**	-
MW257	3/02/2016	Normal	EB1603057	-	-	-	-	-	0.38	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW257	4/05/2016	Normal	EB1611808	-	-	-	-	-	0.24	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW257	21/03/2017	Normal	EB1705900	-	0.03	0.03	0.33	<0.02	0.38	-	<0.02	<0.1	0.04	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.71**	0.82
MW257	2/05/2018	Normal	EB1810943	-	<0.02	0.02	0.2	<0.02	0.28	-	<0.02	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.48**	0.52
MW257	22/10/2018	Normal	EB1825962	-	<0.02	<0.02	0.2	<0.02	0.23	-	<0.02	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.43**	0.45
MW257	15/04/2019	Normal	EB1910255	-	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.11**	0.11
MW257	15/04/2019	Field_D	EB1910255	-	<0.02	<0.02	0.05	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.11**	0.11
MW257	15/04/2019	Interlab_D	RN1231105	-	<0.01	<0.01	0.052	<0.01	0.076	<0.01	<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	0.067	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW257	23/10/2019	Normal	EB1928436	-	<0.02	<0.02	0.18	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.35**	0.35
MW257	26/03/2020	Normal	EB2008693	-	<0.02	<0.02	0.18	<0.02	0.23	-	<0.02	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.41**	0.42
MW257	26/03/2020	Field_D	EB2008693	-	<0.02	<0.02	0.2	<0.02	0.27	-	<0.02	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.47**	0.47
MW257	26/03/2020	Interlab_D	RN1271386	-	0.012	0.012	0.17	<0.01	0.18	<0.01	<0.01	<0.05	0.015	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW257	21/10/2020	Normal	EB2027817	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW257	17/04/2021	Normal	EB2110967	-	<0.02	<0.02	0.09	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**0.17**	0.17
MW258	4/11/2015	Normal	EB1534037	-	0.23	-	1.69	-	1.02	-	<0.02	-	0.26	-	0.04	0.1	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**2.71**	-
MW258	3/02/2016	Normal	EB1603057	-	-	-	-	-	1.09	-	-	-	-	-	-	0.07	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW258	4/05/2016	Normal	EB1611808	-	0.1	0.1	0.95	0.06	0.83	-	<0.02	<0.1	0.02	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**1.78**	<0.01
MW258	21/03/2017	Normal	EB1705900	-	0.2	0.26	2.61	0.16	3.1	-	<0.02	<0.1	0.33	<0.02	0.04	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.71**	6.81
MW261	4/11/2015	Normal	EB1534037	-	0.03	-	0.11	-	0.07	-	<0.02	-	<0.02	-	<0.02	<0.01	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	**0.18**	-
MW261	3/02/2016	Normal	EB1603057	-	-	-	-	-	0.06	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW261	4/05/2016	Normal	EB1611808	-	-	-	-	-	0.04	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW261	21/03/2017	Normal	EB1705900	-	0.02	<0.02	0.15	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.25	0.27

Location Code	Date	Sample Type	Lab Report	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L	µg/L
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
Location Code	**Date**	**Sample Type**	**Lab Report**																																	
MW262	4/11/2015	Normal	EB1534037	-	0.03	-	0.16	-	0.08	-	<0.02	-	<0.02	-	<0.02	<0.01	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	-	0.24	-
MW262	2/02/2016	Interlab_D	488339	-	-	-	-	-	<0.04	-	-	-	-	-	-	<0.04	-	-	-	-	-	-	-	<0.2	<0.04	-	-	-	-	-	-	-	-	-	-	-
MW262	3/02/2016	Normal	EB1603057	-	-	-	-	-	0.09	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW262	3/02/2016	Field_D	EB1603057	-	-	-	-	-	0.06	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW262	4/05/2016	Normal	EB1611808	-	-	-	-	-	0.09	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW262	21/03/2017	Normal	EB1705900	-	0.02	0.02	0.18	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.3	0.34
MW262	24/04/2018	Normal	EB1810403	-	0.03	<0.02	0.16	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.33	0.36
MW262	18/10/2018	Normal	EB1826398	-	0.03	<0.02	0.14	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.27	0.3
MW262	11/04/2019	Normal	EB1909641	-	0.03	0.02	0.2	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.39	0.45
MW262	21/10/2019	Normal	EB1928436	-	0.04	0.04	0.27	<0.02	0.19	-	<0.02	<0.1	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.46	0.6
MW262	24/03/2020	Normal	EB2008693	-	0.05	0.04	0.28	<0.02	0.34	-	<0.02	<0.1	0.04	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.62	0.78
MW262	21/10/2020	Normal	EB2027817	-	0.07	0.02	0.13	<0.02	0.06	-	<0.02	<0.1	0.03	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.19	0.32
MW262	19/04/2021	Normal	EB2110967	-	0.05	0.04	0.24	0.02	0.26	-	<0.02	<0.1	0.04	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.5	0.68
MW262	19/04/2021	Interlab_D	RN1312932	-	0.049	0.039	0.23	0.013	0.2	<0.01	<0.01	<0.05	0.038	<0.02	0.013	0.022	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW263	4/11/2015	Normal	EB1534037	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW263	3/02/2016	Normal	EB1603057	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW263	4/05/2016	Normal	EB1611808	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW263	21/03/2017	Normal	EB1705900	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW264	4/11/2015	Normal	EB1534037	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW264	3/02/2016	Normal	EB1603057	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
MW264	4/05/2016	Normal	EB1611808	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
MW264	21/03/2017	Normal	EB1705900	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW264	19/04/2018	Normal	EB1809892	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW264	19/10/2018	Normal	EB1826398	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW264	11/04/2019	Normal	EB1909641	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW264	23/05/2019	Normal	EB1913218	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW264	21/10/2019	Normal	EB1928436	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW264	22/10/2020	Normal	EB2027817	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW264	13/04/2021	Normal	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW265	24/03/2017	Normal	EB1705969	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW265	24/06/2017	Normal	EB1713077	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW265	25/04/2018	Normal	EB1810408	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW265	18/10/2018	Normal	EB1826398	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW265	25/10/2018	Normal	EB1825962	-	<0.02	<0.02	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.05	0.05
MW265	12/04/2019	Normal	EB1909687	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW265	23/03/2020	Normal	EB2008693	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW265	12/04/2021	Normal	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW266	22/03/2017	Normal	EB1705900	-	0.76	0.69	3.98	0.22	3.01	-	<0.02	<0.1	1.33	0.13	0.18	0.3	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.99**	10.6
MW266	22/03/2017	Normal	ES1709078	-	0.79	0.68	2.34	0.23	2.29	-	<0.002	0.98	1.25	0.49	0.19	0.31	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	-	**4.63**	9.58
MW266	19/04/2018	Normal	EB1809892	-	0.72	0.57	2.57	0.14	1.9	-	<0.02	0.2	1.04	0.24	0.15	0.19	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.47**	7.72
MW266	19/04/2018	Field_D	EB1809892	-	0.7	0.56	2.34	0.12	2.08	-	<0.02	0.2	1.03	0.24	0.15	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.42**	7.62
MW266	19/04/2018	Interlab_D	AECO06_180424	-	0.49	0.39	2	0.077	1.6	<0.01	<0.01	0.19	0.84	0.2	0.12	0.13	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW266	12/04/2019	Normal	EB1909687	-	0.51	0.5	2.45	0.12	1.93	-	<0.02	0.2	1	0.21	0.14	0.19	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.38**	7.25
MW266	23/03/2020	Normal	EB2008693	-	0.76	0.73	3.64	0.22	3.88	-	<0.02	0.3	1.27	0.28	0.24	0.31	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.52**	11.6
MW266	20/04/2021	Normal	EB2110967	-	0.78	0.69	3.38	0.22	3.19	-	<0.02	0.24	1.28	0.32	0.23	0.34	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.57**	10.7
MW267	28/04/2017	Normal	EB1708633	-	<0.02	<0.02	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.15	0.15
MW267	19/06/2018	Normal	EB1814822	-	<1.00	<1.00	<1.00	<1.00	<1.00	-	<1.00	<5.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.50	<1.00	<1.00	<1.00	1.5	<1.00	<1.00	<1.00	<2.50	<1.00	<2.50	<2.50	<1.00	<2.50	-	<1.00	1.5
MW267	17/04/2019	Normal	EB1910106	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW267	25/03/2020	Normal	EB2008692	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	-	<0.05	<0.05
MW267	15/04/2021	Normal	EB2110947	-	<0.02	<0.02	<0.02	<0.02	0.04	-	<0.02	<0.2	<0.02	<0.30	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW268	22/06/2017	Normal	EB1713107	-	0.09	0.06	0.5	0.04	1.32	-	<0.02	<0.1	0.13	<0.02	0.02	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.82	2.22
MW268	23/04/2018	Normal	EB1810404	-	0.1	0.06	0.21	<0.02	0.11	-	<0.02	<0.1	0.15	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.32	0.67
MW268	19/06/2018	Normal	EB1814822	-	0.1	<0.10	0.53	<0.10	0.6	-	<0.10	<0.5	0.13	<0.10	<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	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	-	1.13	1.36
MW268	9/04/2019	Normal	EB1909368	-	0.07	0.07	0.43	<0.02	0.46	-	<0.02	<0.1	0.13	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.89	1.19
MW268	25/03/2020	Normal	EB2008692	-	0.06	0.06	0.4	<0.02	0.33	-	<0.02	<0.1	0.11	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.73	1
MW268	15/04/2021	Normal	EB2110947	-	0.04	0.04	0.25	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.43	0.59
MW269	23/06/2017	Normal	EB1713107	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW269	24/04/2018	Normal	EB1810404	-	0.02	<0.02	0.12	<0.02	0.12	-	<0.02	<0.1	0.04	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.24	0.31
MW269	19/06/2018	Normal	EB1814822	-	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	-	<0.10	<0.10
MW269	19/06/2018	Field_D	EB1814822	-	<1.00	<1.00	<1.00	<1.00	<1.00	-	<1.00	<5.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.50	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.50	<1.00	<2.50	<2.50	<1.00	<2.50	-	<1.00	<1.00
MW269	19/06/2018	Interlab_D	AECO06_180620	-	0.012	<0.01	0.085	<0.01	0.074	<0.01	<0.01	0.096	0.026	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW269	25/07/2018	Interlab_D	EB1818067	-	<0.02	<0.02	0.09	<0.02	0.07	-	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.16	0.19
MW269	25/07/2018	Normal	AECO06_180727	-	0.012	0.011	0.071	<0.01	0.064	<0.01	<0.01	<0.05	0.026	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW269	25/07/2018	Field_D	AECO06_180727	-	0.014	0.014	0.085	<0.01	0.076	<0.01	<0.01	<0.05	0.032	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW269	20/09/2018	Interlab_D	AECO06_180925	-	<0.01	<0.01	0.011	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW269	20/09/2018	Normal	EB1822863	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW269	20/09/2018	Field_D	EB1822863	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW269	20/09/2018	Normal	EB1822863	-	<0.02	<0.02	<0.02	<0.02	0.01	-	<0.02	<0.1	<0.02	0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.07
MW269	19/10/2018	Normal	EB1826388	-	<0.02	<0.02	0.03	<0.02	0.02	-	<0.02	<0.1	<0.02	0.04	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.05	0.12
MW269	10/04/2019	Normal	EB1909368	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.12	0.13
MW269	25/10/2019	Normal	EB1928469	-	<0.02	<0.02	0.06	<0.02	0.07	-	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.19	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.13	0.35
MW269	25/03/2020	Normal	EB2008692	-	<0.02	<0.02	0.06	<0.02	0.07	-	<0.02	<0.1	<0.02	<0.16	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.09	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.13	0.22
MW269	21/10/2020	Normal	EB2027838	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.08	0.08
MW269	15/04/2021	Normal	EB2110947	-	<0.02	<0.02	0.04	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.14	0.14

Location Code	Date	Sample Type	Lab Report	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L	µg/L
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
Location Code	**Date**	**Sample Type**	**Lab Report**																																	
MW270	12/04/2017	Interlab_D	AECO06_170420	-	<0.01	-	0.033	-	<0.01	-	<0.02	<0.05	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	0.033	-
MW270	12/04/2017	Normal	EB1708729	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.12	0.12
MW270	12/04/2017	Normal	EB1710671	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.12	0.12
MW270	12/04/2017	Normal	EB1707726	-	<0.02	<0.02	0.05	<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	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.06	0.06
MW270	12/04/2017	Field_D	EB1710042	-	<0.02	<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	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW270	23/04/2018	Normal	EB1810404	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW270	9/04/2019	Normal	EB1909368	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW270	25/03/2020	Normal	EB2008692	-	<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	<0.05	0.07	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.07
MW270	15/04/2021	Normal	EB2110947	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW271	3/05/2017	Normal	EB1709197	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW271	3/05/2017	Field_D	EB1709197	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW271	3/05/2017	Interlab_D	AECO06_170508_1	-	<0.01	-	<0.02	-	<0.01	-	<0.02	<0.05	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	<0.02	-
MW271	24/04/2018	Normal	EB1810404	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW271	9/04/2019	Normal	EB1909368	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW271	25/03/2020	Normal	EB2008692	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.32	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.32
MW271	15/04/2021	Normal	EB2110947	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW272	21/03/2017	Normal	EB1705900	-	0.04	0.04	0.26	<0.02	0.08	-	<0.02	<0.1	0.05	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.34	0.47
MW272	18/04/2018	Normal	EB1809892	-	0.05	0.04	0.3	<0.02	0.13	-	<0.02	<0.1	0.06	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.43	0.59
MW272	18/04/2018	Field_D	EB1809892	-	0.05	0.04	0.28	<0.02	0.13	-	<0.02	<0.1	0.06	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.41	0.57
MW272	18/04/2018	Interlab_D	AECO06_180424	-	0.035	0.035	0.25	<0.01	0.1	<0.01	<0.01	<0.05	0.049	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.017	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW272	10/04/2019	Normal	EB1909643	-	0.04	0.05	0.3	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.4	0.56
MW272	23/10/2019	Normal	EB1928436	-	0.06	0.06	0.39	<0.02	0.1	-	<0.02	<0.1	0.08	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.49	0.69
MW272	26/03/2020	Normal	EB2008693	-	0.06	0.08	0.42	<0.02	0.16	-	<0.02	<0.1	0.1	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.58	0.86
MW272	21/10/2020	Normal	EB2027817	-	0.07	0.07	0.44	<0.02	0.21	-	<0.02	<0.1	0.1	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.65	0.93
MW272	21/10/2020	Field_D	EB2027817	-	0.07	0.08	0.46	<0.02	0.19	-	<0.02	<0.1	0.11	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.65	0.95
MW272	21/10/2020	Interlab_D	RN1292789	-	0.051	0.05	0.37	<0.01	0.14	<0.01	<0.01	<0.05	0.078	0.02	<0.01	0.011	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW272	19/04/2021	Normal	EB2110967	-	0.08	0.08	0.42	<0.02	0.16	-	<0.02	<0.10	0.12	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.58	0.91
MW273	26/04/2017	Normal	EB1708624	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW273	19/04/2018	Normal	EB1809892	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW273	16/04/2019	Normal	EB1910095	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW273	26/03/2020	Normal	EB2008693	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW273	19/04/2021	Normal	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW273	19/04/2021	Field_D	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW273	19/04/2021	Interlab_D	RN1312932	-	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW274	23/03/2017	Normal	EB1705969	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW274	17/04/2018	Normal	EB1809892	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW274	16/04/2019	Normal	EB1909882	-	<0.02	<0.02	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.05	0.05
MW274	25/03/2020	Normal	EB2008693	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW274	17/04/2021	Normal	EB2110967	-	0.07	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.07
MW275	23/03/2017	Normal	EB1705969	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW275	18/04/2018	Normal	EB1809892	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW275	12/04/2019	Normal	EB1909687	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW275	25/03/2020	Normal	EB2008693	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW275	17/04/2021	Normal	EB2110967	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW276	22/03/2017	Normal	EB1705900	-	0.87	0.96	7.87	0.5	9.02	-	<0.02	<0.1	1.56	0.13	0.2	0.47	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**16.89**	21.6
MW276	22/03/2017	Normal	EB1705900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16.9**	-
MW276	22/03/2017	Normal	ES1709078	-	0.87	0.81	4.36	0.49	6.21	-	<0.002	0.91	1.53	0.55	0.2	0.5	<0.002	<0.002	0.003	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	-	**10.57**	16.4
MW276	22/03/2017	Normal	ES1709078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10.6**	-
MW276	25/04/2018	Normal	EB1810408	-	1.2	1.25	9.85	0.66	12.2	-	<0.02	0.4	1.9	0.41	0.31	0.63	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**22**	28.8
MW276	11/04/2019	Normal	EB1909687	-	0.74	0.8	5.74	0.27	4.28	-	<0.02	0.3	1.41	0.28	0.19	0.32	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**10**	14.3
MW276	23/10/2019	Normal	EB1928436	-	0.84	1.07	8.54	0.48	9.26	-	<0.02	0.2	1.58	0.32	0.25	0.52	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**17.8**	23.1
MW276	23/03/2020	Field_D	EB2008693	-	1.09	1.45	9.23	0.73	12.7	-	<0.04	<0.2	1.65	0.32	0.27	0.61	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	-	**21.9**	28
MW276	26/03/2020	Normal	EB2008693	-	1.24	1.52	8.05	1.04	12.7	-	<0.02	0.3	2.24	0.41	0.35	0.69	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**20.8**	28.5
MW276	26/03/2020	Interlab_D	RN1271386	-	0.9	0.9	7.5	0.43	8.7	<0.01	<0.01	0.35	1.6	0.36	0.25	0.56	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW276	21/10/2020	Normal	EB2027817	-	0.96	1.16	8.9	0.63	10.9	-	<0.02	0.35	1.78	0.38	0.29	0.56	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**19.8**	25.9
MW276	19/04/2021	Normal	EB2110967	-	0.83	1.17	8.05	0.66	11.5	-	<0.02	0.3	1.57	0.35	0.26	0.57	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**19.6**	25.3
MW276	19/04/2021	Field_D	EB2110967	-	1.01	1.33	9.08	0.63	13.5	-	<0.05	0.4	1.91	0.41	0.3	0.66	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	-	**22.6**	29.2
MW276	19/04/2021	Interlab_D	RN1312932	-	0.84	0.84	6.3	0.4	7.8	<0.01	<0.01	0.27	1.2	0.29	0.2	0.42	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW278	12/04/2017	Normal	EB1710043	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW278	24/04/2018	Normal	EB1810403	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW278	24/04/2018	Field_D	EB1810403	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW278	24/04/2018	Interlab_D	AECO06_180501	-	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW278	15/04/2019	Normal	EB1910095	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW278	25/03/2020	Normal	EB2008693	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW278	16/04/2021	Normal	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW279	22/03/2017	Normal	EB1705900	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW279	24/04/2018	Normal	EB1810403	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW279	15/04/2019	Normal	EB1910255	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW279	25/03/2020	Normal	EB2008693	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW279	16/04/2021	Normal	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW280	22/03/2017	Normal	EB1705900	-	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.08	0.08
MW280	24/04/2018	Normal	EB1810403	-	<0.02	<0.02	0.11	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.17	0.17
MW280	12/04/2019	Normal	EB1909687	-	<0.02	<0.02	0.13	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.2	0.2
MW280	24/03/2020	Normal	EB2008693	-	<0.02	<0.02	0.11	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.2	0.2

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L	µg/L
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
Location Code	**Date**	**Sample Type**	**Lab Report**																																	
MW280	17/04/2021	Normal	EB2110967	-	0.04	0.02	0.16	<0.02	0.09	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.25	0.31
MW281	22/03/2017	Normal	EB1705900	-	0.52	0.47	2.8	0.21	4.11	-	<0.02	<0.1	0.64	<0.02	0.15	0.34	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**6.91**	9.24
MW281	22/03/2017	Normal	ES1709078	-	0.44	0.36	1.96	0.18	3.28	-	<0.002	0.22	0.58	0.14	0.13	0.31	<0.002	<0.002	0.003	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	-	**5.24**	7.65
MW281	24/04/2018	Normal	EB1810403	-	0.42	0.37	2.06	0.17	3.21	-	<0.02	0.1	0.48	0.11	0.13	0.25	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**5.27**	7.3
MW281	18/04/2019	Normal	EB1910255	-	0.36	0.3	1.79	0.13	2.62	-	<0.02	<0.1	0.4	0.09	0.1	0.24	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.41**	6.03
MW281	2/04/2020	Normal	EB2010564	-	0.35	0.31	1.78	0.13	2.22	-	<0.02	<0.10	0.4	0.09	0.12	0.23	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4**	5.63
MW281	20/04/2021	Normal	EB2110959	-	0.26	0.28	1.33	0.14	2.35	-	<0.02	<0.1	0.38	0.1	0.1	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.68**	5.14
MW282	22/03/2017	Normal	EB1705900	-	0.04	0.04	0.36	<0.02	1.28	-	<0.02	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.64	1.73
MW282	24/04/2018	Normal	EB1810403	-	0.04	0.04	0.31	<0.02	1.3	-	<0.02	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.61	1.69
MW282	15/04/2019	Normal	EB1910255	-	0.05	<0.02	0.34	<0.02	0.8	-	<0.02	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.14	1.19
MW282	24/03/2020	Normal	EB2008693	-	0.07	0.06	0.39	<0.02	0.51	-	<0.02	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.9	1.05
MW282	15/04/2021	Normal	EB2110967	-	0.08	0.07	0.43	<0.02	0.54	-	<0.02	<0.1	0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.97	1.16
MW282	15/04/2021	Field_D	EB2110967	-	0.07	0.06	0.37	<0.02	0.49	-	<0.02	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.86	1.01
MW282	15/04/2021	Interlab_D	RN1312932	-	0.084	0.056	0.4	0.01	0.42	<0.01	<0.01	<0.05	0.017	<0.02	<0.01	0.019	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW283	28/04/2017	Normal	EB1708627	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW283	19/04/2018	Normal	EB1810254	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW283	11/04/2019	Normal	EB1909874	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW283	23/05/2019	Normal	EB1913217	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW283	25/03/2020	Normal	EB2008683	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW283	20/04/2021	Normal	EB2110958	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW285	13/04/2017	Normal	EB1710043	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW285	23/05/2018	Normal	EB1812717	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.04	0.04
MW285	23/10/2018	Normal	EB1825962	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW285	8/04/2019	Interlab_D	RN1230420	-	<0.01	<0.01	0.054	<0.01	0.09	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.02	<0.05	-	-	-
MW285	11/04/2019	Normal	EB1909641	-	<0.02	<0.02	0.06	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.15	0.15
MW285	11/04/2019	Field_D	EB1909638	-	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.14	0.14
MW285	23/05/2019	Normal	EB1913218	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.09	0.09
MW285	23/03/2020	Normal	EB2008693	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW285	15/04/2021	Normal	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW285	15/04/2021	Field_D	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW285	15/04/2021	Interlab_D	RN1312932	-	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW288	23/06/2017	Normal	EB1713076	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.01	0.01
MW288	17/04/2018	Normal	EB1809904	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW288	5/04/2019	Normal	EB1908885	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW288	25/03/2020	Normal	EB2008680	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW288	21/04/2021	Normal	EB2110961	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW289	25/06/2017	Interlab_D	AECO06/170628/2	-	<0.01	-	<0.02	-	<0.01	-	<0.02	<0.05	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	-	-
MW289	25/06/2017	Normal	EB1713076	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW289	25/06/2017	Field_D	EB1713076	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW289	18/04/2018	Normal	EB1809904	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW289	5/04/2019	Normal	EB1908885	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW289	25/03/2020	Normal	EB2008680	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	-	<0.02	<0.02
MW289	21/04/2021	Normal	EB2110961	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW290	13/04/2017	Normal	EB1711525	-	<0.02	<0.02	0.13	<0.02	0.38	-	<0.02	0.1	0.09	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.52	0.77
MW290	13/04/2017	Normal	EB1711574	-	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.07	0.07
MW290	18/05/2017	Normal	EB1710283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW290	16/04/2018	Normal	EB1809905	-	0.04	<0.02	0.3	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.3	0.37
MW290	10/04/2019	Normal	EB1909640	-	0.03	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.13	0.16
MW290	25/03/2020	Normal	EB2008681	-	0.02	0.02	0.22	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.24	0.28
MW290	21/04/2021	Normal	EB2110962	-	0.02	0.02	0.23	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.25	0.31
MW291	28/04/2017	Normal	EB1708626	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW291	17/04/2018	Normal	EB1809905	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW291	11/04/2019	Normal	EB1909640	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW291	25/03/2020	Normal	EB2008681	-	<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	<0.05	0.28	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.28
MW291	22/10/2020	Normal	EB2027833	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.05
MW291	21/04/2021	Normal	EB2110962	-	<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	<0.05	0.07	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.1
MW292	13/04/2017	Normal	EB1711530	-	<0.02	<0.02	0.19	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.29	0.29
MW292	13/04/2017	Normal	EB1711576	-	<0.02	<0.02	0.16	<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	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.19	0.19
MW292	18/05/2017	Normal	EB1710282	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW292	16/04/2018	Normal	EB1809907	-	<0.02	<0.02	0.23	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.28	0.3
MW292	10/04/2019	Normal	EB1909642	-	<0.02	<0.02	0.18	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.27	0.27
MW292	25/03/2020	Normal	EB2008682	-	<0.02	<0.02	0.16	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.32	0.32
MW292	19/04/2021	Normal	EB2110954	-	<0.02	<0.02	0.17	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.31	0.31
MW293	28/04/2017	Normal	EB1708625	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.03	0.03
MW293	17/04/2018	Normal	EB1809907	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW293	19/10/2018	Normal	EB1826396	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW293	10/04/2019	Normal	EB1909642	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW293	25/03/2020	Normal	EB2008682	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW293	19/04/2021	Normal	EB2110954	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.02
MW294	28/04/2017	Normal	EB1708633	-	0.07	0.06	0.64	0.03	0.94	-	<0.02	0.4	0.11	0.46	0.04	0.16	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.58	2.91
MW294	23/04/2018	Normal	EB1810404	-	0.06	0.06	0.46	0.03	0.61	-	<0.02	0.4	0.3	0.56	0.15	0.15	<0.02	<0.02	0.06	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.07	2.84
MW294	9/04/2019	Normal	EB1909368	-	0.05	0.04	0.33	<0.02	0.48	-	<0.02	0.3	0.25	0.47	0.13	0.14	<0.02	<0.02	0.07	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.81	2.26
MW294	25/03/2020	Normal	EB2008692	-	0.1	0.1	0.66	0.04	0.66	-	<0.02	0.5	0.37	0.77	0.2	0.16	0.02	<0.02	0.08	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.32	3.66
MW294	15/04/2021	Normal	EB2110947	-	0.08	0.1	0.62	0.04	0.65	-	<0.02	0.4	0.36	0.77	0.22	0.13	0.02	<0.02	0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.27	3.44

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L	µg/L
Limit of Reporting				0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water																0.56																			0.07	
PFAS NEMP 2020 Recreational Water																**10**																			**2**	
Location Code	**Date**	**Sample Type**	**Lab Report**																																	
MW295	28/04/2017	Normal	EB1708633	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW295	24/04/2018	Normal	EB1810404	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW295	10/04/2019	Normal	EB1909368	-	<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	<0.05	0.1	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	0.12
MW295	25/03/2020	Normal	EB2008692	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.06	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.5	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.5
MW295	21/10/2020	Normal	EB2027838	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.25	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.25
MW295	15/04/2021	Normal	EB2110947	-	<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	<0.05	0.21	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.21
MW296	25/06/2017	Normal	EB1713073	-	0.26	0.27	1.43	0.06	0.6	-	<0.02	<0.1	0.28	<0.02	0.04	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.03**	2.99
MW296	16/04/2018	Normal	EB1809902	-	0.22	0.22	1.38	0.04	0.58	-	<0.02	<0.1	0.3	0.07	0.03	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.96	2.88
MW296	8/04/2019	Interlab_D	RN1230420	-	0.17	0.19	1.3	0.028	0.54	<0.01	<0.01	0.051	0.27	0.058	0.026	0.048	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.092	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.02	<0.05	-	-	-
MW296	10/04/2019	Normal	EB1909639	-	0.26	0.22	1.56	0.06	0.63	-	<0.02	<0.1	0.37	<0.02	0.04	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.19**	3.29
MW296	10/04/2019	Field_D	EB1909638	-	0.19	-	0.944	-	0.529	-	-	<0.002	0.233	0.0498	0.03	0.0542	-	-	-	-	-	-	<0.001	0.075	<0.001	<0.001	-	-	-	-	-	-	-	-	1.47	-
MW296	25/03/2020	Normal	EB2008679	-	0.2	0.2	1.41	0.08	0.99	-	<0.02	<0.1	0.3	0.07	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.4**	3.34
MW296	15/04/2021	Normal	EB2110942	-	0.22	0.23	1.33	0.06	0.62	-	<0.02	<0.1	0.32	0.07	0.04	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.95	2.95
MW297	25/06/2017	Normal	EB1713073	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW297	17/04/2018	Normal	EB1809902	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW297	11/04/2019	Normal	EB1909639	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW297	25/03/2020	Normal	EB2008679	-	<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	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.08
MW297	22/05/2020	Normal	EB2013704	-	<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	<0.05	0.14	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.14
MW297	22/10/2020	Normal	EB2027831	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW297	15/04/2021	Normal	EB2110942	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW298	11/03/2017	Normal	EB1705014	-	1.18	1.3	3.65	0.09	0.91	-	<0.02	<0.1	1.83	0.4	0.2	0.28	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.56**	9.84
MW298	29/09/2017	Normal	EB1720333	-	1.17	1.38	3.28	0.1	1.24	-	<0.02	<0.1	2.08	0.57	0.37	0.26	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.52**	10.4
MW298	27/06/2018	Normal	B684675-A	-	1.3	1.6	4.5	0.068	0.41	<0.01	<0.01	0.29	2	0.41	0.38	0.31	<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	<0.05	**4.89**	11.26
MW298	27/06/2018	Normal	B684675-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW298	27/06/2018	Normal	B684675-B	-	1.7	2	4.7	0.07	0.3	<0.05	<0.05	2.8	3.6	1.6	0.4	0.51	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**5**	17.62
MW298	27/06/2018	Normal	B684675-A	-	1.2	1.5	4.1	0.062	0.49	<0.01	<0.01	0.28	1.8	0.39	0.35	0.29	<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	<0.05	**4.54**	10.5
MW298	27/06/2018	Normal	B684675-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW298	27/06/2018	Normal	B684675-B	-	1.7	2	4.4	0.08	0.4	<0.05	<0.05	2.8	3.6	1.9	0.4	0.57	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**4.8**	17.86
MW298	10/07/2019	Normal	EB1918202	-	1.56	2.09	5.27	0.0628	0.362	-	<0.0005	0.083	2.48	0.657	0.396	0.347	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**5.63**	13.3
MW298	10/07/2019	Field_D	EB1918202	-	1.31	2	5.21	0.0809	0.314	-	<0.0005	0.171	2.26	0.571	0.299	0.284	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.002	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**5.52**	12.5
MW298	30/10/2019	Normal	EB1928975	-	1.86	2.26	7.09	0.0714	0.365	-	<0.0005	0.21	3.31	0.696	0.396	0.369	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.021	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**7.46**	16.6
MW298	5/03/2020	Normal	EB2006415	-	1.94	2.3	5.46	0.0787	0.186	-	<0.0016	0.084	2.84	0.754	0.518	0.424	<0.0016	<0.0016	<0.0016	<0.0040	<0.0016	<0.0016	<0.002	<0.002	<0.002	<0.002	<0.0016	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**5.65**	14.6
MW299	11/03/2017	Normal	EB1705014	-	15.1	14	57.6	3.5	46.5	-	<0.02	2	27	4.2	3.9	**10.6**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.09	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**104**	184
MW299	11/03/2017	Normal	EB1705014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**104.1**	-
MW299	29/09/2017	Normal	EB1720333	-	12.6	11.3	42.5	4.19	66.5	-	<0.02	0.7	36.4	6.67	10.7	**12.5**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.19	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**109**	204
MW299	18/04/2018	Normal	EB1809957	-	6.38	5.67	23.6	1.4	18.4	-	<0.02	1.8	12.2	2.58	2.41	4.13	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.11	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**42**	78.7
MW299	27/06/2018	Normal	B684675-A	-	6	5.2	21	0.85	21	<0.01	<0.01	1.4	12	2.4	1.9	4.7	<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	<0.05	**41.51**	76.27
MW299	27/06/2018	Normal	B684675-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW299	27/06/2018	Normal	B684675-B	-	6.8	5.7	21	0.95	15	<0.05	<0.05	10	21	9.1	2.7	3.6	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**36.24**	95.91
MW299	27/06/2018	Normal	B684675-A	-	4.2	3.9	21	0.72	23	<0.01	<0.01	0.93	11	1.6	1.5	3.8	<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	<0.05	**43.79**	71.17
MW299	27/06/2018	Normal	B684675-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW299	27/06/2018	Normal	B684675-B	-	4.8	4.2	18	0.85	12	<0.05	<0.05	7.2	16	6.7	1.9	3.2	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**29.72**	74.57
MW299	25/10/2018	Interlab_D	AECO06_181030_1	-	2.8	2.6	15	1.1	31	<0.01	<0.01	1	5.6	1.3	1	2.2	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.029	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW299	25/10/2018	Normal	EB1825962	-	3.02	3.34	11.5	1.36	29.3	-	<0.02	0.9	6.17	1.43	1.27	2.58	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**40.8**	60.9
MW299	25/10/2018	Field_D	EB1825962	-	2.9	3.53	12.9	1.44	34.4	-	<0.02	0.9	5.99	1.33	1.3	2.55	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**47.3**	67.2
MW299	5/04/2019	Normal	EB1908876	-	18.4	15	54.8	4.05	46.1	-	<0.02	5.9	32.1	7.25	5.7	8.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**101**	197
MW299	10/07/2019	Normal	EB1918202	-	3.57	3.58	12.6	0.589	8.48	-	<0.0005	0.238	8.32	1.84	1.27	2.18	<0.0005	<0.0005	0.003	<0.0005	<0.0005	<0.0005	<0.001	0.072	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**21.1**	42.7
MW299	23/10/2019	Normal	EB1928436	-	1.79	2.7	7.36	0.06	0.34	-	<0.02	1.1	3.02	0.74	0.48	0.4	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.7**	18
MW299	30/10/2019	Normal	EB1928975	-	3.93	3.07	12.7	0.61	7.47	-	<0.0005	0.392	8.22	1.77	1.3	2	<0.0005	<0.0005	0.003	<0.0005	<0.0005	<0.0005	0.001	0.07	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**20.2**	41.5
MW299	30/10/2019	Normal	EB1928975	-	-	-	14.6	0.77	7.66	-	-	-	-	-	-	2.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**22.3**	61.5
MW299	30/10/2019	Field_D	EB1928975	-	4.02	3.31	13.1	0.656	8.01	-	<0.0005	0.563	9.52	1.9	1.36	2.25	<0.0005	<0.0005	0.003	<0.0005	<0.0005	<0.0005	<0.001	0.063	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**21.1**	44.8
MW299	5/03/2020	Normal	EB2006415	-	3.39	3.51	11.8	0.46	6.9	-	<0.0016	0.19	7.69	1.78	1.31	1.72	<0.0016	<0.0016	0.0032	<0.0040	<0.0016	<0.0016	<0.002	0.044	<0.002	<0.002	<0.0016	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**18.7**	40.5
MW299	5/03/2020	Normal	EB2006415	-	-	-	12	0.698	8.01	-	-	-	-	-	-	1.92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**20**	50.4
MW299	5/03/2020	Field_D	EB2006415	-	3.67	2.61	9.13	0.523	6.74	-	<0.0016	0.23	7.01	1.68	1.47	1.68	<0.0016	<0.0016	0.0027	<0.0040	<0.0016	<0.0016	<0.002	0.053	<0.002	<0.002	<0.0016	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	-	**15.9**	34.8
MW299	26/03/2020	Normal	EB2008691	-	4.18	4.25	15.6	0.66	11.6	-	<0.06	0.5	8.98	2.05	1.75	2.3	<0.06	<0.06	<0.06	<0.16	<0.06	<0.06	<0.06	0.1	<0.06	<0.06	<0.06	<0.16	<0.06	<0.16	<0.16	<0.06	<0.16	-	**27.2**	52
MW299	20/10/2020	Normal	EB2027817	-	4.27	4.66	17.5	0.84	8.94	-	<0.07	1.5	10.7	2.28	2.04	3.1	<0.07	<0.07	<0.07	<0.18	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.18	<0.07	<0.18	<0.18	<0.07	<0.18	-	**26.4**	55.8
MW299	17/04/2021	Normal	EB2110967	-	4.04	4.09	13.7	0.61	10.7	-	<0.21	1.5	8.36	2.08	1.73	2.38	<0.21	<0.21	<0.21	<0.53	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.53	<0.21	<0.53	<0.53	<0.21	<0.53	-	**24.4**	49.2
MW300	11/03/2017	Normal	EB1705014	-	26.3	23.8	82	4.64	62.1	-	<0.02	3.4	40	6.26	4.03	**14**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**144**	266
MW300	11/03/2017	Normal	EB1705014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**144.1**	-
MW300	11/03/2017	Normal	ES1709078	-	11.9	10.3	44.3	3.3	37.6	-	<0.002	31.8	34.8	12.1	4.93	8.86	0.003	<0.002	0.01	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	-	**81.9**	200
MW300	29/09/2017	Normal	EB1720333	-	22.7	23.9	62.9	5.14	63.6	-	<0.02	1.4	59.4	10.4	14.7	**16.4**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.2	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**126**	281
MW300	11/05/2018	Normal	EB1811568	-	18.4	15	55.6	5.5	58.7	-	<0.02	5	33.8	6.86	6.33	8.5	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.15	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**114**	214
MW300	26/06/2018	Normal	B684675-A	-	18	15	63	3.2	68	<0.01	<0.01	4.8	34	7.4	5.8	**14**	<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	<0.05	**130.55**	232.6
MW300	26/06/2018	Normal	B684675-B	-	20	16	56	3.1	28	<0.05	<0.05	23	50	21	6.2	9.5	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**83.29**	231.83
MW300	24/10/2018	Normal	EB1825962	-	16.5	17	51.6	5.57	46.1	-	<0.02	6.5	22.3	8.15	7.18	7.97	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**97.7**	189
MW300	5/04/2019	Normal	EB1908876	-	1.76	2.48	7.06	0.07	0.44	-	<0.02	0.5	2.9	0.72	0.44	0.36	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**7.5**	16.7
MW300	10/07/2019	Normal	EB1918202	-	12.2	12.4	38.9	2.85	32.3	-	<0.0200	1.45	24	5.93	3.53	6.38	<0.0200	<0.0200	<0.0200	<0.0500	<0.0200	<0.0200	<0.020	0.044	<0.020	<0.020	<0.0200	<0.050	<0.0200	<0.050	<0.050	<0.0200	<0.050	-	**71.2**	140
MW300	23/10/2019	Normal	EB1928436	-	16.6	15.8	52.2	2.81	28.7	-	<0.02	3.4	28.8	6.5	5.04	7.26	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	<0.05	0.11	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**80.9**	167
MW300	30/10/2019	Normal	EB1928975	-	1.49	1.18	4.48	0.28	3.33	-	<0.0005	0.159	2.77	0.576	0.368	0.671	0.0008	<0.0005	0.0108	<0.0005	<0.0005	<0.0005	0.003	0.102	0.002	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**7.81**	15.4
MW300	5/03/2020	Normal	EB2006415	-	16.5	16	51.6	4.59	43.5	-	<0.0160	0.866	32.8	7.61	5.3	8.67	<0.0160	<0.0160	<0.0160	<0.0400	<0.0160	<0.0160	<0.016	0.093	<0.016	<0.016	<0.0160	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	-	**95.1**	188
MW300	24/03/2020	Normal	EB2008691	-	16.1	14.5	50	4.07	40.6	-	<0.19	3.3	27.2	6.16	5.24	7.33	<0.19	<0.19	<0.19	<0.48	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.48	<0.19	<0.48	<0.48	<0.19	<0.48	-	**90.6**	174
MW300	20/10/2020	Normal	EB2027817	-	11.2	11.9	48.2	3.98	45.6	-	<0.18	3.4	24.1	5.16	4.87	8.02	<0.18	<0.18	<0.18	<0.44	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.44	<0.18	<0.44	<0.44	<0.18	<0.44	-	**93.8**	166
MW300	17/04/2021	Normal	EB2110967	-	9.74	10.3	47.8	4.37	59.8	-	<0.10	3.46	19.1	4.59	4.29	8.36	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	0.16	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	-	**108**	172
MW300	17/04/2021	Field_D	EB2110967	-	8.93	9.83	42.4	4	63.3	-	<0.08	3	18.4	4.42	4.12	8.83	<0.08	<0.08	<0.08	<0.21	<0.08	<0.08	<0.08	0.12	<0.08	<0.08	<0.08	<0.21	<0.08	<0.21	<0.21	<0.08	<0.21	-	**106**	167

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids												PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides								Sum of PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Perfluorooctane sulfonamidoacetic acid (FOSAA)	Sum of PFHxS and PFOS	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	µg/L
Limit of Reporting	0.01	0.0005	0.0005	0.0005	0.0005	0.0003	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.005	0.0003	0.0003
PFAS NEMP 2020 Drinking Water													0.56																			0.07	
PFAS NEMP 2020 Recreational Water													**10**																			**2**	

Location Code	Date	Sample Type	Lab Report																																
MW300	17/04/2021	Interlab_D	RN1312932	-	7.3	6.1	34	2	37	<0.01	<0.01	2.5	12	2.9	2.6	5.1	<0.01	<0.01	0.013	<0.02	<0.02	<0.01	<0.01	0.12	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW301	24/01/2019	Normal	EB1902057	-	0.02	0.02	0.14	<0.02	0.54	-	<0.02	<0.1	0.03	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.68	0.77
MW301	5/03/2020	Normal	EB2006420	-	0.02	0.02	0.15	<0.02	0.08	-	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.23	0.3
MW301	5/03/2020	Field_D	EB2006420	-	0.02	0.02	0.15	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.24	0.31
MW301	5/03/2020	Interlab_D	RN1267043	-	0.02	0.019	0.12	<0.01	0.074	<0.01	<0.01	<0.05	0.024	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW303	24/01/2019	Normal	EB1902057	-	0.05	0.05	0.34	0.03	1.1	-	<0.02	<0.1	0.29	0.22	0.19	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.44	2.42
MW304	24/01/2019	Normal	EB1902057	-	0.18	0.18	1.06	0.11	2.46	-	<0.02	0.2	0.89	0.6	0.46	0.46	<0.02	<0.02	0.06	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**3.52**	6.76
MW305	24/01/2019	Normal	EB1902057	-	0.37	0.35	2.07	0.2	2.32	-	<0.02	0.2	1.32	0.62	0.46	0.66	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.39**	8.7
MW306	17/04/2019	Normal	EB1911014	-	0.231	0.263	1.45	0.2	2.62	-	<0.0005	0.067	1.12	0.695	0.424	0.677	0.002	<0.0005	0.0534	<0.0005	<0.0005	<0.0005	<0.001	0.103	0.028	<0.001	0.0038	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**4.07**	7.94
MW306	4/09/2019	Normal	EB1923359	-	0.46	0.48	2.88	0.32	7.83	-	<0.02	0.6	2.15	1.74	0.73	1.09	<0.02	<0.02	0.08	<0.05	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**10.7**	18.5
MW307	3/04/2019	Rinsate	EB1910258	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	-	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	<0.0003	<0.0003
MW307	17/04/2019	Normal	EB1911014	-	0.229	0.258	1.32	0.144	0.999	-	<0.0005	0.056	0.704	0.327	0.225	0.372	<0.0005	<0.0005	0.0446	<0.0005	<0.0005	<0.0005	<0.001	0.028	<0.001	<0.001	0.001	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**2.32**	4.71
MW307	18/09/2019	Normal	EB1924571	-	0.341	0.339	2.15	0.109	1.25	-	<0.0005	0.116	1.07	0.369	0.302	0.436	<0.0005	<0.0005	0.0301	<0.0005	<0.0005	<0.0005	<0.001	0.021	<0.001	<0.001	0.0008	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**3.4**	6.53
MW308	17/04/2019	Normal	EB1911014	-	0.642	0.694	3.43	0.598	8.92	-	0.0044	0.136	2.46	1.49	0.774	1.2	0.0051	<0.0005	0.0584	<0.0005	<0.0005	<0.0005	<0.001	0.11	0.044	<0.001	0.0084	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**12.4**	20.6
MW309	17/04/2019	Normal	EB1911014	-	0.157	0.172	0.974	0.154	2.82	-	<0.0005	0.105	0.472	0.218	0.127	0.222	0.0007	<0.0005	0.0062	<0.0005	<0.0005	<0.0005	<0.001	0.02	0.006	<0.001	0.0113	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	**3.79**	5.46
MW309	17/04/2019	Normal	EB1911014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW310	3/07/2019	Normal	EB1917426	-	0.0016	0.0018	0.0157	<0.0005	<0.01	-	<0.0005	<0.002	0.0023	0.0027	<0.0005	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.002	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	<0.01	<0.01
MW310	3/07/2019	Normal	EB1917426	-	<0.02	<0.02	<0.02	-	0.0147	-	-	-	<0.02	<0.02	-	<0.01	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	0.0304	0.042
MW311	3/07/2019	Normal	EB1917426	-	0.0026	0.0023	0.017	0.0008	0.0283	-	<0.0005	0.008	0.0081	0.0078	0.0019	0.0036	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0453	0.0804
MW311	15/08/2019	Normal	EB1921470	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW311	15/08/2019	Normal	EB1921470	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW311	30/10/2019	Normal	EB1928975	-	<0.0005	<0.0005	<0.0005	<0.0005	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	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0005	0.0005
MW311	5/03/2020	Normal	EB2006415	-	<0.0005	<0.0005	0.002	<0.0005	0.0092	-	<0.0005	0.004	0.0027	0.0022	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	0.0014	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	-	0.0112	0.0222
MW312	23/05/2019	Normal	657987	0.08	0.2	0.24	1.1	0.08	0.91	<0.01	<0.01	0.22	0.9	0.59	0.15	0.13	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.29	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	**2.01**	4.89
MW313	23/05/2019	Normal	657987	0.04	0.12	0.13	0.64	0.02	0.11	<0.01	<0.01	0.12	0.54	0.6	0.22	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.39	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.75	3
MW313	13/04/2021	Normal	EB2110564	-	0.2	0.18	0.85	0.02	0.18	-	<0.02	0.2	0.78	0.92	0.32	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.4	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.03	4.16
MW313	13/04/2021	Field_D	EB2110564	-	0.19	0.18	0.85	<0.02	0.16	-	<0.02	0.2	0.79	0.9	0.32	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.46	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.01	4.16
MW313	13/04/2021	Interlab_D	RN1312036	-	0.16	0.14	0.79	<0.01	0.11	<0.01	<0.01	0.22	0.69	0.78	0.31	0.087	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.39	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW314	23/05/2019	Normal	657987	0.04	0.09	0.1	0.54	0.03	0.15	<0.01	<0.01	<0.05	0.1	0.02	0.02	0.03	<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	<0.05	-	0.69	1.12
MW316	13/09/2018	Normal	B710405	-	0.059	0.049	0.31	0.027	1.2	<0.01	<0.01	0.058	0.11	0.044	0.03	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	<0.05	1.54	1.97
MW316	13/09/2018	Normal	B710405-A	-	0.059	0.049	0.31	0.027	1.2	<0.01	<0.01	0.058	0.11	0.044	0.03	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	<0.05	1.54	1.97
MW316	13/09/2018	Normal	B710405-B	-	0.05	<0.05	0.3	<0.05	1.2	<0.05	<0.05	<2.5	0.3	0.09	<0.05	0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	1.5	1.96
MW316	13/09/2018	Normal	B710405-B	-	0.2	0.2	1.3	0.1	1.6	<0.05	<0.05	<2.5	0.5	0.2	<0.05	0.07	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.1	<0.05	<1	<0.25	<0.05	<1	-	**2.87**	4.09
MW317	13/09/2018	Normal	B710405	-	0.2	0.19	1.3	0.13	1.7	<0.01	<0.01	0.34	0.28	0.057	0.039	0.088	<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	<0.05	**2.94**	4.26
MW317	13/09/2018	Normal	B710405-A	-	0.2	0.19	1.3	0.13	1.7	<0.01	<0.01	0.34	0.28	0.057	0.039	0.088	<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	<0.05	**2.94**	4.26
MW329	14/04/2021	Normal	EB2110564	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	<0.01
MW401D	20/04/2021	Normal	EB2110910	-	0.26	0.24	1.23	0.06	0.83	-	<0.02	<0.1	0.4	0.12	0.05	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**2.06**	3.26
MW401S	20/04/2021	Normal	EB2110910	-	<0.02	<0.02	0.02	<0.02	<0.01	-	<0.02	0.2	0.91	0.18	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	1.31
MW401S	20/04/2021	Field_D	EB2110910	-	<0.02	<0.02	0.02	<0.02	<0.01	-	<0.02	0.2	0.9	0.17	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	0.02	1.29
MW401S	20/04/2021	Interlab_D	RN1312581	-	<0.01	<0.01	0.022	<0.01	<0.02	<0.01	<0.01	0.23	0.77	0.13	0.015	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-
MW402D	20/04/2021	Normal	EB2110910	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.1	0.13	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	<0.01	0.13
MW402S	20/04/2021	Normal	EB2110910	-	0.62	0.8	4.14	0.29	4.03	-	<0.02	0.3	1.58	0.36	0.25	0.42	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**8.17**	12.8
MW403D	20/04/2021	Normal	EB2110910	-	0.25	0.3	2.15	0.13	1.98	-	<0.02	<0.10	0.54	<0.16	0.09	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	**4.13**	5.59
MW403S	20/04/2021	Normal	EB2110910	-	0.12	0.13	0.86	0.03	0.24	-	<0.02	<0.10	0.3	0.07	0.04	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	-	1.1	1.85

				Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Calcium (Filtered)	Magnesium (Filtered)	Potassium (Filtered)	Sodium (Filtered)	Cations Total	Sulfate as SO4	Chloride	Fluoride	Carbonate as CaCO3	Anions Total	Ionic Balance	Dissolved Organic Carbon	Total Suspended Solids
			Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	mg/L	mg/L	mg/L	mg/L	meq/L	%	mg/L	mg/L
			Limit of Reporting	1	1	1	1	1	1	1	0.01	1	1	0.1	1	0.01	0.01	1	5
Location ID	Lab Report Number	Sample Type	Sample Date																
MW172	EB1928436029	Normal	23/10/2019	221	<1	242	53	34	2	154	12.2	15	279	NA	21	13	3.27	5	184
MW172	EB2009332	Normal	30/03/2020	233	<1	233	45	33	2	157	11.8	15	253	0.2	<1	12.1	1.1	7	224
MW172	EB2027817	Normal	20/10/2020	270	<1	270	65	45	2	185	15	14	344	-	<1	15.4	1.13	4	162
MW198	EB1928436007	Normal	22/10/2019	878	<1	941	78	98	2	735	44	501	351	NA	63	39.1	5.83	8	45
MW198	EB2008691	Normal	25/03/2020	957	<1	957	79	113	2	765	46.6	578	530	NA	<1	46.1	0.5	18	27
MW198	EB2027817	Normal	19/10/2020	875	<1	875	70	92	2	664	40	501	434	-	<1	40.2	0.2	7	8
MW202	EB1928436005	Normal	22/10/2019	383	<1	383	178	133	5	319	33.8	39	816	NA	<1	31.5	3.6	8	56
MW202	EB2009332	Normal	30/03/2020	861	<1	861	48	74	2	611	35.1	127	546	0.3	<1	35.2	0.19	16	94
MW202	EB2027817	Normal	23/10/2020	786	<1	786	47	62	2	504	29.4	105	408	-	<1	29.4	0.04	12	96
MW223	EB1928436031	Normal	23/10/2019	384	<1	384	99	74	2	296	24	80	416	NA	<1	21.1	6.4	6	1120
MW223	EB2008691	Normal	25/03/2020	420	<1	420	91	71	2	277	22.5	80	437	NA	<1	22.4	0.22	8	29
MW223	EB2027817	Normal	19/10/2020	425	<1	425	89	66	2	276	21.9	72	419	-	<1	21.8	0.27	3	159
MW232	EB1928436018	Normal	23/10/2019	132	<1	132	15	12	<1	37	3.34	5	12	NA	<1	3.08	4.13	2	67
MW232	EB2009332	Normal	1/04/2020	98	<1	98	11	10	<1	20	2.24	2	8	0.2	<1	2.22	-	4	189
MW232	EB2027817	Normal	20/10/2020	105	<1	105	14	12	<1	31	3.03	4	15	-	<1	2.6	-	6	6
MW236	EB1928436020	Normal	23/10/2019	341	<1	363	108	73	4	174	19.1	12	453	NA	22	20.3	3.08	6	80
MW236	EB2009332	Normal	1/04/2020	294	<1	294	73	51	5	122	13.3	7	267	0.1	<1	13.6	1.03	12	584
MW236	EB2027817	Normal	20/10/2020	318	<1	318	108	74	4	177	19.3	11	462	-	<1	19.6	0.86	5	9150
MW253	EB1928436021	Normal	23/10/2019	289	<1	289	156	111	4	363	32.8	11	1020	NA	<1	34.8	2.91	7	62
MW253	EB2009332	Normal	1/04/2020	363	<1	363	122	86	3	296	26.1	8	673	0.2	<1	26.4	0.54	6	88
MW253	EB2027817	Normal	20/10/2020	388	<1	388	103	70	3	274	22.9	8	545	-	<1	23.3	0.86	6	116
MW255	EB1928436035	Normal	23/10/2019	242	<1	242	120	106	3	366	30.7	12	736	NA	<1	25.8	8.6	3	52
MW255	EB2008693-AA	Normal	26/03/2020	292	<1	292	101	96	2	324	27.1	11	743	NA	<1	27	0.12	6	138
MW255	EB2027817	Normal	21/10/2020	174	<1	174	124	56	3	326	25	29	754	-	<1	25.3	0.59	<1	62
MW269	EB1928469001	Normal	25/10/2019	<1	702	754	309	<1	33	134	22.1	7	127	NA	52	18.8	8.07	24	21
MW269	EB2008692	Normal	25/03/2020	<1	736	777	251	<1	29	142	19.4	6	145	NA	40	19.7	0.76	21	157
MW269	EB2027838	Normal	21/10/2020	<1	278	321	59	<1	18	156	10.2	4	193	-	43	11.9	7.91	22	118
MW299	EB1928436019	Normal	23/10/2019	646	<1	647	106	95	4	470	33.6	36	517	NA	<1	28.3	8.71	5	46
MW299	EB2008691	Normal	26/03/2020	740	<1	740	291	264	5	965	78.4	35	2180	NA	<1	77	0.86	14	37
MW299	EB2027817	Normal	20/10/2020	710	<1	710	300	264	5	961	78.6	35	2340	-	<1	80.9	1.44	10	30

LOR is limit of reporting
mg/L is milligrams per litre
meq/l is milliequivalents per litre
-' denotes no analysis undertaken
<' denotes concentration is less than
NA not analysed

	PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids										PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							Sum of PFAS	
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	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
Limit of Reporting	0.01	0.01	0.01	0.01	0.01	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	0.01	0.01	0.01	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01
PFAS NEMP 2020 Drinking Water											0.56																		0.07	
PFAS NEMP 2020 Recreational Water											**10**																		**2**	

Location	Date	Sample Type	Lab Report																												
MW001	29/09/2015	Normal	EB1530503	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
MW001	15/03/2017	Normal	EB1713888	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.1	0.15	0.22	0.07	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.56
MW001	6/02/2018	Normal	EB1803820	0.06	0.05	0.24	<0.02	0.05	<0.02	<0.1	0.2	0.2	0.06	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.29	0.88
MW001	2/04/2019	Normal	EB1908876	0.06	0.03	0.27	<0.02	0.03	<0.02	<0.1	0.26	0.32	0.08	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	1.07
MW002	15/03/2017	Normal	EB1713888	0.06	0.04	0.17	<0.02	0.07	<0.02	<0.1	0.1	0.19	0.04	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.24	0.71
MW002	6/02/2018	Normal	EB1803820	0.04	0.02	0.04	<0.02	<0.01	<0.02	0.1	0.21	0.49	0.08	0.04	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	1.1
MW002	2/04/2019	Normal	EB1908876	0.1	0.06	0.2	<0.02	0.02	<0.02	0.1	0.36	0.57	0.15	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	1.66
MW002	1/04/2020	Normal	EB2009331	0.28	0.16	0.52	<0.02	0.04	<0.02	0.2	0.84	1.38	0.19	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	1.13	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.56	4.8
MW002	16/04/2021	Normal	EB2110965	0.31	0.25	0.56	<0.02	0.03	<0.02	0.4	1.69	3.35	0.36	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.7	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.59	7.72
MW003	29/09/2015	Normal	EB1530503	-	-	-	-	6.14	-	-	-	-	-	0.62	-	-	-	-	-	-	-	0.2	<0.1	-	-	-	-	-	-	-	-	-	-
MW003	15/03/2017	Normal	EB1713888	1.4	1.45	7.45	0.33	4.49	<0.02	<0.1	1.44	0.93	0.35	0.61	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.17	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**11.9**	18.6
MW003	15/03/2017	Normal	ES1709078	0.81	0.74	2.51	0.19	3.7	<0.002	0.94	1.3	0.72	0.33	0.52	0.002	<0.002	0.009	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**6.21**	11.8
MW003	8/02/2018	Normal	EB1803820	1.93	1.77	8.68	0.37	7.76	<0.02	0.6	2.94	1.25	0.78	0.93	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.17	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**16.4**	27.2
MW003	3/04/2019	Normal	EB1908876	1.76	1.81	8.6	0.3	5.29	<0.02	0.5	3.19	1.22	0.86	0.78	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.16	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**13.9**	24.5
MW003	1/04/2020	Normal	EB2009331	2.23	2.18	11	0.44	7.05	<0.03	0.3	4.28	1.41	1.07	1.36	<0.03	<0.03	<0.03	<0.08	<0.03	<0.03	<0.05	0.15	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	**18**	31.5
MW003	16/04/2021	Normal	EB2110965	1.98	2.49	8.89	0.35	4.08	<0.02	0.5	4.38	1.67	1.1	1.33	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.16	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**13**	26.9
MW004	7/02/2018	Normal	EB1803820	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW004	1/04/2019	Normal	EB1908876	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01
MW004	1/04/2020	Normal	EB2009331	<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	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	0.08
MW004	16/04/2021	Normal	EB2110965	<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	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	0.06
MW005	7/02/2018	Normal	EB1803820	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW005	1/04/2019	Normal	EB1908876	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW006	7/02/2018	Normal	EB1803820	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW006	2/04/2019	Normal	EB1908876	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW006	1/04/2020	Normal	EB2009331	<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	<0.05	0.78	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	0.78
MW006	16/04/2021	Normal	EB2110965	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW007	7/02/2018	Normal	EB1803820	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW007	2/04/2019	Normal	EB1908876	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW007	1/04/2020	Normal	EB2009331	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW007	16/04/2021	Normal	EB2110965	<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	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.1
MW008	7/02/2018	Normal	EB1803820	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW008	2/04/2019	Normal	EB1908876	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW008	1/04/2020	Normal	EB2009331	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW008	16/04/2021	Normal	EB2110965	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW009	15/03/2017	Normal	EB1713888	1.9	1.74	9	0.34	3.55	<0.02	0.2	2.51	0.83	0.6	0.82	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.17	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**12.6**	21.7
MW009	15/03/2017	Normal	ES1709078	2.08	1.08	4.77	0.32	2.36	<0.002	1.18	1.95	1.59	0.54	0.71	<0.002	<0.002	0.004	<0.005	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**7.13**	16.6
MW009	8/02/2018	Normal	EB1803820	1.11	0.95	4.42	0.2	3.62	<0.02	0.3	1.61	0.82	0.4	0.43	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**8.04**	14
MW009	3/04/2019	Normal	EB1908876	0.83	0.75	3.76	0.16	3.12	<0.02	0.2	1.34	0.69	0.36	0.32	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.07	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**6.88**	11.6
MW009	1/04/2020	Normal	EB2009331	0.96	0.93	4.64	0.25	5.06	<0.03	<0.2	1.56	0.64	0.4	0.56	<0.03	<0.03	<0.03	<0.08	<0.03	<0.03	<0.05	0.08	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	**9.7**	15.1
MW009	16/04/2021	Normal	EB2110965	0.92	1.16	4.99	0.31	4.35	<0.02	0.2	1.79	0.83	0.44	0.64	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**9.34**	15.7
MW010	15/03/2017	Normal	EB1713888	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW010	8/02/2018	Normal	EB1803820	0.03	0.02	0.12	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.21
MW010	1/04/2019	Normal	EB1908876	0.06	0.05	0.24	<0.02	0.06	<0.02	<0.1	0.1	0.04	0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	0.58
MW010	1/04/2020	Normal	EB2009331	0.25	0.2	0.95	0.04	0.23	<0.02	<0.1	0.43	0.17	0.1	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.18	2.61
MW010	16/04/2021	Normal	EB2110965	0.27	0.25	0.73	0.02	0.11	<0.02	<0.1	0.48	0.2	0.12	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.84	2.29
MW011	16/03/2017	Normal	EB1713888	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02
MW011	7/02/2018	Normal	EB1803820	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.08
MW011	1/04/2019	Normal	EB1908876	<0.02	<0.02	0.07	<0.02	0.06	<0.02	<0.1	0.04	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.17
MW011	1/04/2020	Normal	EB2009331	0.02	<0.02	0.09	<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	<0.05	0.68	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.88
MW011	16/04/2021	Normal	EB2110965	0.03	0.03	0.1	<0.02	0.01	<0.02	<0.1	0.05	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.26
MW012	16/03/2017	Normal	EB1713888	1	0.81	3.98	0.18	2.12	<0.02	<0.1	1.3	0.4	0.28	0.34	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**6.1**	10.5
MW012	7/02/2018	Normal	EB1803820	1.03	0.77	3.03	0.12	1.49	<0.02	0.2	1.23	0.47	0.26	0.25	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.52**	8.93
MW012	2/04/2019	Normal	EB1908876	0.91	0.8	3.36	0.15	2	<0.02	0.2	1.36	0.49	0.3	0.28	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.11	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**5.36**	9.96
MW013	15/03/2017	Normal	EB1713888	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW013	6/02/2018	Normal	EB1803820	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW013	2/04/2019	Normal	EB1908876	<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	<0.05	0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
MW013	1/04/2020	Normal	EB2009331	<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	<0.05	0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	0.05
MW013	16/04/2021	Normal	EB2110965	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
POT001	2/02/2016	Normal	EB1602986	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
POT002	26/08/2015	Normal	EB1527392	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
POT004	26/08/2015	Normal	EB1527392	-	-	-	-	0.46	-	-	-	-	-	0.07	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
POT005	26/08/2015	Normal	EB1527392	-	-	-	-	0.86	-	-	-	-	-	0.14	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-

Property ID	Location ID	Sample Date	DO (mg/L) *Field measurement*	EC (µS/cm) *Field measurement*	pH *Field measurement*	E_r (mV) *Field measurement*	E_h (mV)	Temp (°C) *Field measurement*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0207	SW004	13/04/2021	6.96	808	7.99	71.6	276.6	21.7	Medium	Clear	Slight organic odour	No sheen	Grab sample
0207	SW009	13/04/2021	5.62	228.3	7.7	142.9	347.9	21.1	Medium	Clear	Slight organic odour	No sheen	Grab sample
0207	SW010	13/04/2021	3.4	218.3	7.07	124.1	329.1	23.5	Low	Clear	No odour	No sheen	Grab sample
0207	SW011	13/04/2021	1.62	194.4	6.8	134.9	339.9	20.9	Medium	Clear	No odour	Biosheen appearance	Grab sample
0207	SW012	13/04/2021	4.64	181.5	7.32	128.2	333.2	28.0	Medium	Clear	No odour	No sheen	Grab sample
0207	SW013	13/04/2021	1.88	169	7.21	93.9	298.9	22.5	Medium	Clear	Slight organic odour	No sheen	Grab sample
0207	SW019	23/03/2021	-	-	-	-	-	-	-	-	-	-	Grab samples. No quality parameter field measurements were collected as a functional water quality meter was not available.
0207	SW021	23/03/2021	-	-	-	-	-	-	-	-	-	-	
0207	SW024	23/03/2021	-	-	-	-	-	-	-	-	-	-	
0207	SW025	23/03/2021	-	-	-	-	-	-	-	-	-	-	
0207	SW026	23/03/2021	-	-	-	-	-	-	-	-	-	-	
0207	SW027	23/03/2021	-	-	-	-	-	-	-	-	-	-	
0207	SW028	15/04/2021	8.87	1127	9.18	87.5	292.5	21.7	Low	Clear	Slight organic odour	No sheen	Grab sample
0207	SW032	15/04/2021	2.4	529.5	7.79	28.3	233.3	23.6	Medium	Clear	Slight organic odour	No sheen	Grab sample
0207	SW040	12/04/2021	3.68	247.2	7.02	48.4	253.4	22.1	Medium	Clear	No odour	No sheen	Grab sample
0207	SW043	12/04/2021	8.71	449.8	7.71	84.9	289.9	28.9	Turbid	Brown	No odour	No sheen	Grab sample from pooled water in road
0207	SW056	15/04/2021	4.94	457	7.81	80.1	285.1	26.9	Medium	Clear	Slight organic odour	No sheen	Grab sample
0207	SW059	-	-	-	-	-	-	-	-	-	-	-	Dry
0207	SW059	20/04/2021	6.54	1302	7.9	90.3	295.3	21.5	Clear	Clear	Slight organic odour	No sheen	Grab sample
0207	SW063	23/03/2021	-	-	-	-	-	-	-	-	-	-	Grab samples. No quality parameter field measurements were collected as a functional water quality meter was not available.
0207	SW065	23/03/2021	-	-	-	-	-	-	-	-	-	-	
0207	SW066	23/03/2021	-	-	-	-	-	-	-	-	-	-	

DO is dissolved oxygen
EC is electrical conductivity
E_h is oxidation reduction potential
Oxidation reducation potential (E_r) measured with a platinum electrode and a silver/silver chloride reference electrode (E_r) and converted to E_h by $E_h = E_r + 205$ mV (based on a groundwater temperature of 21°C)
Temp is Temperature
µS/cm is microsiemens per centrimetre
ºC is degrees Celcius
mV is millivolts

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS
Limit of Reporting	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
PFAS NEMP 2020 Freshwater 99%	0.001	0.0005	0.0005	0.0005	0.0005	0.0001	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0003	0.0003
PFAS NEMP 2020 Recreational Water						0.00023							19																		
													10																	**2**	

Location	Date	Sample Type	Lab Report																														
SW001	23/05/2014	Field_D	EB1412619	-	-	-	-	-	0.16	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW001	23/05/2014	Normal	EB1412619	-	-	-	-	-	0.12	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW002	21/05/2014	Normal	EB1412441	-	-	-	-	-	0.14	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW003	21/05/2014	Normal	EB1412441	-	-	-	-	-	0.08	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW004	27/05/2014	Normal	EB1412900	-	-	-	-	-	0.4	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW004	9/08/2015	Normal	EB1525621	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW004	1/02/2017	Normal	EB1702117	-	<0.02	<0.02	0.02	<0.02	0.02	-	<0.02	<0.1	0.02	0.03	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.12
SW004	20/04/2018	Normal	EB1809892	-	<0.02	<0.02	<0.02	<0.02	0.01	-	<0.02	<0.1	0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.08
SW004	8/04/2019	Normal	EB1909663	-	0.0161	-	0.0109	-	0.0132	-	-	<0.002	0.0209	0.0222	0.004	0.0123	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	0.0241	-
SW004	23/03/2020	Normal	EB2008693	-	<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	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.06
SW004	13/04/2021	Normal	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW005	21/05/2014	Normal	EB1412441	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW005	1/02/2017	Normal	EB1702117	-	<0.02	<0.02	<0.02	<0.02	0.03	-	<0.02	<0.1	0.03	0.04	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.14
SW006	27/05/2014	Normal	EB1412900	-	-	-	-	-	0.03	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW007	26/05/2014	Normal	EB1412900	-	-	-	-	-	0.1	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW008	27/08/2014	Normal	EB1441408	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW009	27/08/2014	Normal	EB1441408	-	-	-	-	-	1.66	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW009	1/02/2017	Normal	EB1702117	-	0.14	0.08	0.6	0.04	1.58	-	<0.02	<0.1	0.16	0.11	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.18**	2.8
SW009	8/04/2019	Normal	EB1909637	-	0.171	-	0.325	-	0.678	-	-	0.092	0.134	0.0442	0.0201	0.0402	-	-	-	-	-	-	-	<0.001	<0.001	0.002	<0.001	-	-	-	-	-	-	-	1	-
SW009	13/04/2021	Normal	EB2110967	-	0.05	0.04	0.27	<0.02	0.63	-	<0.02	<0.1	0.08	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.9	1.13
SW010	29/10/2014	Normal	EB1445388	-	-	-	-	-	0.79	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW010	9/08/2015	Normal	EB1525621	-	-	-	-	-	0.25	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW010	1/02/2017	Normal	EB1702117	-	0.05	0.02	0.1	<0.02	0.35	-	<0.02	<0.1	0.05	0.04	<0.02	0.05	0.04	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.07	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.45	0.77
SW010	20/04/2018	Normal	EB1809892	-	<0.02	<0.02	<0.02	<0.02	0.1	-	<0.02	<0.1	<0.02	<0.02	<0.02	0.04	0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.16
SW010	8/04/2019	Normal	EB1909636	-	0.0394	-	0.107	-	0.189	-	-	0.037	0.0398	0.0122	0.005	0.0112	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	0.296	-
SW010	13/04/2021	Normal	EB2110967	-	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	0.15
SW011	29/10/2014	Normal	EB1445388	-	-	-	-	-	0.07	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW011	9/08/2015	Normal	EB1525621	-	-	-	-	-	0.14	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW011	29/03/2016	Normal	EB1608609	-	<0.02	-	<0.02	-	0.06	-	<0.02	-	0.04	-	0.03	0.17	0.09	<0.05	0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	0.06	-
SW011	29/03/2017	Normal	EB1706401	-	0.06	0.03	0.26	<0.02	0.51	-	<0.02	<0.1	0.09	<0.02	<0.02	0.03	0.03	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.77	1.01
SW011	20/04/2018	Field_D	EB1809892	-	<0.02	<0.02	0.07	<0.02	0.22	-	<0.02	<0.1	0.03	<0.02	<0.02	0.03	0.06	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.29	0.41
SW011	20/04/2018	Interlab_D	AECO06_180424	-	0.013	<0.01	0.056	<0.01	0.18	<0.01	<0.01	<0.05	0.023	<0.02	<0.01	0.019	0.055	0.011	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.02	<0.02	<0.01	<0.05	-	-
SW011	20/04/2018	Normal	EB1809892	-	<0.02	<0.02	0.06	<0.02	0.21	-	<0.02	<0.1	0.03	<0.02	<0.02	0.03	0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.27	0.38
SW011	8/04/2019	Normal	EB1909636	-	0.0278	-	0.0885	-	0.187	-	-	0.029	0.0318	0.009	0.0036	0.0089	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	0.276	-
SW011	23/03/2020	Normal	EB2008693	-	<0.02	<0.02	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05
SW011	13/04/2021	Normal	EB2110967	-	0.04	0.03	0.15	<0.02	0.32	-	<0.02	<0.1	0.06	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.47	0.65
SW012	29/10/2014	Field_D	EB1445388	-	-	-	-	-	0.29	-	-	-	-	-	-	0.07	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW012	29/10/2014	Interlab_D	437530	-	-	-	-	-	0.17	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-
SW012	29/10/2014	Normal	EB1445388	-	-	-	-	-	0.21	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW012	1/02/2017	Normal	EB1702117	-	0.05	<0.02	0.08	<0.02	0.24	-	<0.02	<0.1	0.06	0.05	0.03	0.19	0.2	0.15	0.04	<0.05	<0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.32	1.11
SW012	20/04/2018	Normal	EB1809892	-	0.07	0.03	0.26	<0.02	0.63	-	<0.02	<0.1	0.1	0.04	<0.02	0.03	0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.89	1.18
SW012	8/04/2019	Normal	EB1909637	-	0.0175	-	0.0504	-	0.134	-	-	0.029	0.0186	0.0044	0.0023	0.0053	-	-	-	-	-	-	-	<0.001	0.001	<0.001	<0.001	-	-	-	-	-	-	-	0.184	-
SW012	23/03/2020	Field_D	EB2008693	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW012	23/03/2020	Interlab_D	RN1271386	-	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.05	<0.01	<0.02	<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	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.05	-	-
SW012	23/03/2020	Normal	EB2008693	-	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW012	13/04/2021	Normal	EB2110967	-	0.05	0.03	0.21	<0.02	0.57	-	<0.02	<0.1	0.08	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.78	1
SW013	29/10/2014	Normal	EB1445388	-	-	-	-	-	1.26	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW013	9/08/2015	Field_D	EB1525621	-	<0.02	-	0.16	-	0.5	-	<0.02	-	0.06	-	<0.02	<0.02	<0.02	<0.05	0.04	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	0.66	-
SW013	9/08/2015	Interlab_D	468674	-	<0.01	-	0.03	-	0.02	-	<0.01	-	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	0.05	-
SW013	9/08/2015	Normal	EB1525621	-	<0.02	-	0.11	-	0.43	-	<0.02	-	0.06	-	<0.02	<0.02	<0.02	<0.05	0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	0.54	-
SW013	9/02/2016	Normal	EB1603675	-	-	-	-	-	0.47	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW013	30/03/2016	Field_D	EB1608609	-	0.07	-	0.42	-	0.43	-	<0.02	-	0.11	-	<0.02	0.08	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	0.85	-
SW013	30/03/2016	Interlab_D	495205	-	0.05	-	0.14	-	0.22	-	<0.01	<0.05	0.09	0.03	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	0.36	-
SW013	30/03/2016	Normal	EB1608609	-	0.09	-	0.24	-	0.36	-	<0.02	-	0.11	-	0.04	0.06	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	0.6	-
SW013	3/05/2016	Normal	EB1611799	-	-	-	-	-	0.7	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
SW013	3/05/2016	Normal	EB1611802	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW013	1/02/2017	Normal	EB1702117	-	0.09	0.04	0.22	0.02	0.6	-	<0.02	<0.1	0.1	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.82	1.15
SW013	20/04/2018	Normal	EB1809892	-	0.08	0.05	0.26	<0.02	0.72	-	<0.02	<0.1	0.1	0.04	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.98	1.28
SW013	8/04/2019	Normal	EB1909637	-	0.007	-	0.0217	-	0.0748	-	-	0.035	0.0077	<0.0005	0.0008	0.0021	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	0.0965	-
SW013	23/03/2020	Normal	EB2008693	-	<0.02	<0.02	0.04	<0.02	0.45	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.49	0.49
SW013	13/04/2021	Field_D	EB2110967	-	0.04	0.03	0.17	<0.02	0.55	-	<0.02	<0.1	0.07	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.72	0.91
SW013	13/04/2021	Interlab_D	RN1312932	-	0.049	0.029	0.18	0.011	0.53	<0.01	<0.01	<0.05	0.063	0.031	<0.01	0.016	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.05	-	-
SW013	13/04/2021	Normal	EB2110967	-	0.04	0.03	0.18	<0.02	0.56	-	<0.02	<0.1	0.07	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.74	0.93
SW014	29/10/2014	Normal	EB1445388	-	-	-	-	-	0.28	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW014	11/08/2015	Normal	EB1525621	-	-	-	-	-	0.16	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW014	2/02/2017	Normal	EB1702117	-	0.05	0.03	0.15	<0.02	0.28	-	<0.02	<0.1	0.06	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.43	0.63
SW015	29/10/2014	Normal	EB1445388	-	-	-	-	-	1.43	-	-	-	-	-	-	0.14	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW015	16/12/2014	Normal	ES1428296	-	-	-	-	-	3.04	-	-	-	-	-	-	0.16	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW015	11/08/2015	Normal	EB1525621	-	-	-	-	-	1.45	-	-	-	-	-	-	0.13	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW015	9/02/2016	Normal	EB1603675	-	0.09	-	0.51	-	0.85	-	<0.02	-	0.15	-	0.03	0.03	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	1.36	-
SW015	3/05/2016	Normal	EB1611799	-	-	-	-	-	1.74	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-
SW015	3/05/2016	Normal	EB1611802	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW015	3/02/2017	Normal	EB1705587	-	0.05	0.02	0.18	<0.02	0.52	-	<0.02	<0.1	0.05	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.7	0.87
SW015	22/03/2017	Normal	EB1710122	-	0.07	0.04	0.37	<0.02	0.59	-	<0.02	<0.1	0.08	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.96	1.18
SW016	17/11/2014	Normal	EB1446505	-	-	-	-	-	0.66	-	-	-	-	-	-	0.12	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
SW016	1/02/2017	Normal	EB1702117	-	0.06	0.02	0.15	<0.02	0.34	-	<0.02	<0.1	0.05	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.49	0.67

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS
Limit of Reporting	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
PFAS NEMP 2020 Freshwater 99%	0.001	0.0005	0.0005	0.0005	0.0005	0.0001	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0003	0.0003
PFAS NEMP 2020 Recreational Water						0.00023							19																		
													10																	**2**	
SW017	17/11/2014	Normal	EB1446505	-	-	-	-	-	0.6	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW018	17/11/2014	Field_D	EB1446505	-	-	-	-	-	1.27	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW018	17/11/2014	Interlab_D	439475	-	-	-	-	-	2.3	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-	-	-	-	-	-
SW018	17/11/2014	Normal	EB1446505	-	-	-	-	-	1.57	-	-	-	-	-	-	0.03	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW018	1/02/2017	Field_D	EB1702117	-	0.1	0.05	0.22	<0.02	0.55	-	<0.02	<0.1	0.11	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.77	1.11
SW018	1/02/2017	Normal	EB1702117	-	0.09	0.04	0.24	<0.02	0.58	-	<0.02	<0.1	0.11	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.82	1.14
SW018	1/02/2017	Interlab_D	AECO06_170207	-	0.047	-	0.21	-	0.3	-	<0.02	<0.05	0.066	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	0.51	-
SW019	16/12/2014	Normal	ES1428296	-	-	-	-	-	0.75	-	-	-	-	-	-	0.32	-	-	-	-	-	-	-	0.4	0.2	-	-	-	-	-	-	-	-	-
SW019	9/02/2016	Normal	EB1603675	-	-	-	-	-	0.78	-	-	-	-	-	-	0.23	-	-	-	-	-	-	-	0.5	1.4	-	-	-	-	-	-	-	-	-
SW019	20/02/2017	Normal	EB1703569	-	<0.02	<0.02	0.11	<0.02	0.29	-	<0.02	<0.1	0.24	0.19	0.26	0.52	0.5	0.22	0.47	<0.05	0.04	0.38	<0.05	0.44	0.77	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.4	4.43
SW019	25/02/2020	Normal	EB2005415	-	0.06	0.03	0.33	<0.02	0.74	-	<0.02	<0.10	0.07	0.05	<0.02	0.05	<0.02	<0.02	0.03	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.07	1.36
SW019	23/03/2021	Normal	EB2108522	-	0.02	<0.02	0.11	<0.02	0.3	-	<0.02	<0.1	0.1	0.06	0.04	0.06	0.04	<0.02	0.05	<0.05	<0.02	<0.02	<0.05	0.07	0.13	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.41	0.98
SW019	9/07/2021	Field_D	EB2120071	-	0.03	0.02	0.23	<0.02	0.44	-	<0.02	0.1	0.34	0.16	0.14	0.14	0.05	<0.02	0.11	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.67	1.76
SW019	9/07/2021	Normal	EB2120071	-	0.04	0.03	0.24	<0.02	0.47	-	<0.02	0.2	0.36	0.17	0.15	0.14	0.05	<0.02	0.12	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.71	1.97
SW019	9/07/2021	Normal	EB2120071	-	0.04	0.03	0.27	0.02	0.46	-	<0.02	0.2	0.37	0.18	0.14	0.15	0.04	<0.02	0.11	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.73	2.01
SW020	16/12/2014	Normal	ES1428296	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW021	16/12/2014	Field_D	ES1428296	-	-	-	-	-	0.59	-	-	-	-	-	-	0.63	-	-	-	-	-	-	-	2.5	0.4	-	-	-	-	-	-	-	-	-
SW021	16/12/2014	Normal	ES1428296	-	-	-	-	-	0.52	-	-	-	-	-	-	0.84	-	-	-	-	-	-	-	2.3	0.3	-	-	-	-	-	-	-	-	-
SW021	16/12/2014	Interlab_D	443042	-	-	-	-	-	0.11	-	-	-	-	-	-	0.64	-	-	-	-	-	-	-	0.57	0.81	-	-	-	-	-	-	-	-	-
SW021	12/08/2015	Normal	EB1525621	-	-	-	-	-	0.56	-	-	-	-	-	-	**15.5**	-	-	-	-	-	-	-	27.8	7.2	-	-	-	-	-	-	-	-	-
SW021	9/02/2016	Normal	EB1603675	-	-	-	-	-	0.47	-	-	-	-	-	-	2.96	-	-	-	-	-	-	-	6.8	7.9	-	-	-	-	-	-	-	-	-
SW021	3/05/2016	Field_D	EB1611799	-	-	-	-	-	0.42	-	-	-	-	-	-	4.37	-	-	-	-	-	-	-	21.5	21.8	-	-	-	-	-	-	-	-	-
SW021	3/05/2016	Interlab_D	499669	-	-	-	-	-	0.43	-	-	-	-	-	-	7.9	-	-	-	-	-	-	-	24	28	-	-	-	-	-	-	-	-	-
SW021	3/05/2016	Normal	EB1611799	-	<0.02	<0.02	0.1	<0.02	0.48	-	<0.02	<0.1	2.44	0.86	2.96	4.25	15.2	0.3	10.4	0.08	0.3	0.87	<0.05	22.6	24.6	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.58	<0.01
SW021	3/05/2016	Normal	EB1611802	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW021	20/02/2017	Normal	EB1703569	-	<0.02	<0.02	0.13	<0.02	0.69	-	<0.02	0.4	1.35	1.03	1.58	4.08	3.15	1.71	3.71	<0.05	0.13	3.32	<0.05	3.27	5.85	0.06	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.82	30.5
SW021	22/03/2017	Interlab_D	AECO06_170328	-	0.014	-	0.16	-	1.2	-	<0.02	0.95	3	2.5	3.9	7.7	7.6	0.43	6.9	<0.05	0.13	2.3	-	10	8.9	-	<0.02	-	-	-	-	-	-	1.36	-
SW021	22/03/2017	Field_D	EB1705908	-	0.02	0.02	0.21	0.03	0.77	-	<0.02	1.1	5.22	3.68	6.02	**11.7**	6.1	<0.02	9.36	<0.05	<0.02	0.26	<0.05	10.7	10.7	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.98	65.89
SW021	22/03/2017	Normal	EB1705908	-	0.02	0.02	0.23	0.03	0.73	-	<0.02	1	5.28	3.63	5.97	**10.1**	5.92	0.02	9.45	<0.05	<0.02	0.29	<0.05	10.6	9.86	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.96	63.2
SW021	25/02/2020	Field_D	EB2005415	-	<0.02	<0.02	0.13	<0.02	0.62	-	<0.02	0.5	1.62	0.55	1.16	1.2	1.37	0.44	1.12	0.25	0.26	0.61	<0.05	1.56	6.33	0.06	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.75	17.8
SW021	25/02/2020	Interlab_D	RN1266061	-	0.01	0.015	0.11	0.021	0.48	0.044	<0.01	0.41	1.4	0.5	1	1.1	1.1	0.14	0.94	0.077	0.071	0.38	<0.01	1.8	5.3	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-
SW021	25/02/2020	Normal	EB2005415	-	<0.03	0.03	0.14	<0.03	0.58	-	<0.03	0.2	0.97	0.35	0.89	0.94	1.14	0.42	0.87	0.21	0.18	0.54	<0.05	1.68	7.14	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	0.72	16.3
SW021	23/03/2021	Normal	EB2108522	-	0.04	0.03	0.17	<0.02	0.58	-	<0.02	<0.1	0.1	0.09	0.03	0.03	0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	0.08	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.75	1.17
SW022	16/12/2014	Field_D	ES1428296	-	-	-	-	-	0.95	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW022	16/12/2014	Normal	ES1428296	-	-	-	-	-	1.03	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW022	16/12/2014	Interlab_D	443042	-	-	-	-	-	0.71	-	-	-	-	-	-	0.05	-	-	-	-	-	-	-	0.06	<0.01	-	-	-	-	-	-	-	-	-
SW022	9/02/2016	Normal	EB1603675	-	-	-	-	-	1.55	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW023	12/08/2015	Normal	EB1525621	-	-	-	-	-	0.4	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW024	12/08/2015	Field_D	EB1525621	-	-	-	-	-	2.03	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW024	12/08/2015	Interlab_D	468674	-	-	-	-	-	0.44	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	0.08	<0.01	-	-	-	-	-	-	-	-	-
SW024	12/08/2015	Normal	EB1525621	-	-	-	-	-	1.02	-	-	-	-	-	-	0.07	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW024	9/02/2016	Field_D	EB1603675	-	-	-	-	-	0.68	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW024	9/02/2016	Interlab_D	489125	-	-	-	-	-	0.31	-	-	-	-	-	-	<0.04	-	-	-	-	-	-	-	<0.2	<0.04	-	-	-	-	-	-	-	-	-
SW024	9/02/2016	Normal	EB1603675	-	-	-	-	-	0.76	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-
SW024	3/05/2016	Normal	EB1611799	-	-	-	-	-	1.33	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-
SW024	20/02/2017	Normal	EB1703569	-	<0.02	<0.02	0.08	<0.02	0.33	-	<0.02	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.41	0.44
SW024	22/03/2017	Normal	EB1705908	-	0.05	0.04	0.32	<0.02	0.49	-	<0.02	<0.1	0.07	<0.02	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.81	1.02
SW024	8/04/2019	Field_D	EB1909638	-	0.138	-	0.743	-	3.29	-	-	0.055	0.18	0.0408	0.0383	0.111	-	-	-	-	-	-	<0.001	0.003	0.002	<0.001	-	-	-	-	-	-	**4.03**	-
SW024	8/04/2019	Interlab_D	RN1230420	-	0.11	0.097	0.85	0.051	3.2	<0.01	<0.01	0.067	0.19	0.067	0.036	0.092	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.02	<0.05	-	-
SW024	8/04/2019	Normal	EB1909636	-	0.149	-	0.879	-	3.23	-	-	0.058	0.196	0.044	0.0384	0.113	-	-	-	-	-	-	<0.001	0.003	0.003	<0.001	-	-	-	-	-	-	-	**4.11**	-
SW024	25/02/2020	Normal	EB2005415	-	0.22	0.2	1.19	0.05	1.01	-	<0.02	<0.10	0.44	0.1	0.05	0.08	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.2**	3.34
SW024	23/03/2021	Normal	EB2108522	-	0.37	0.32	2.12	0.08	1.06	-	<0.02	0.3	0.68	0.35	0.03	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.18**	5.34
SW025	11/08/2015	Normal	EB1525621	-	-	-	-	-	1.99	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW025	20/02/2017	Field_D	EB1703569	-	<0.02	0.04	0.17	<0.02	0.35	-	<0.02	<0.1	0.05	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.52	0.63
SW025	20/02/2017	Normal	EB1703569	-	0.04	0.02	0.17	<0.02	0.35	-	<0.02	<0.1	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.52	0.64
SW025	8/04/2019	Normal	EB1909644	-	0.164	0.117	0.545	0.0587	0.941	-	<0.0005	0.06	0.157	0.0426	0.0331	0.0787	0.0014	<0.0005	0.0035	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0039	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	1.49	2.2
SW025	25/02/2020	Normal	EB2005415	-	0.07	0.06	0.43	0.03	1.16	-	<0.02	<0.1	0.15	0.04	0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.59	2.01
SW025	23/03/2021	Normal	EB2108522	-	0.04	0.04	0.24	<0.02	0.36	-	<0.02	<0.1	0.08	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.6	0.76
SW025	3/06/2021	Field_D	EB2116620	-	0.04	0.02	0.19	<0.02	0.64	-	<0.02	<0.1	0.06	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.83	0.97
SW025	3/06/2021	Interlab_D	RN1318856	-	0.039	0.031	0.25	0.011	0.67	<0.01	<0.01	<0.05	0.072	0.022	0.014	0.022	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-
SW025	3/06/2021	Normal	EB2116620	-	<0.04	0.02	0.21	<0.02	0.76	-	<0.02	<0.1	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.97	1.08
SW025	3/06/2021	Normal	EB2116620	-	0.04	0.03	0.26	<0.02	0.74	-	<0.02	<0.1	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1	1.16
SW025	3/06/2021	Normal	EB2116620	-	0.03	<0.02	0.16	<0.02	0.59	-	<0.02	<0.1	0.05	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.75	0.84
SW025	3/06/2021	Normal	EB2116620	-	<0.02	<0.02	0.14	<0.02	0.53	-	<0.02	<0.1	0.04	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.67	0.72
SW025	3/06/2021	Normal	EB2116620	-	<0.02	<0.02	0.13	<0.02	0.5	-	<0.02	<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	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.63	0.66
SW025	3/06/2021	Normal	EB2116620	-	<0.02	<0.02	0.13	<0.02	0.51	-	<0.02	<0.1	0.04	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.64	0.69
SW025	3/06/2021	Normal	EB2116620	-	<0.02	<0.02	0.14	<0.02	0.54	-	<0.02	<0.1	0.04	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.68	0.73
SW025	3/06/2021	Normal	EB2116620	-	0.02	<0.02	0.18	<0.02	0.69	-	<0.02	<0.1	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.87	0.95
SW025	4/06/2021	Normal	EB2116620	-	0.02	<0.02	0.14	<0.02	0.58	-	<0.02	<0.1	0.03	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.72	0.79
SW025	4/06/2021	Normal	EB2116620	-	<0.02	<0.02	0.13	<0.02	0.56	-	<0.02	<0.1	0.04	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.69	0.74
SW025	9/07/2021	Field_D	EB2120071	-	0.02	<0.02	0.14	<0.02	0.5	-	<0.02	<0.1	0.07	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.64	0.77
SW025	9/07/2021	Normal	EB2120071	-	0.03	<0.02	0.14	<0.02	0.55	-	<0.02	<0.1	0.08	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.69	0.85
SW025	9/07/2021	Normal	EB2120071	-	0.05	0.03	0.22	<0.02	0.52	-	<0.02	<0.1	0.2	0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.74	1.14
SW026	11/08/2015	Normal	EB1525621	-	-	-	-	-	2.32	-	-	-	-	-	-	0.13	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW026	3/05/2016	Normal	EB1611799	-	-	-	-	-	1.64	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-
SW026	1/02/2017	Normal	EB1702117	-	0.09	0.07	0.54	0.04	1.72	-	<0.02	<0.1	0.1	0.07	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.26**	2.72

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS
Limit of Reporting	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
PFAS NEMP 2020 Freshwater 99%	0.001	0.0005	0.0005	0.0005	0.0005	0.0001	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0003	0.0003
PFAS NEMP 2020 Recreational Water						0.00023							19																		
													10																	**2**	

Location	Date	Sample Type	Lab Report																													
SW026	24/03/2017	Normal	EB1705969	-	0.1	0.05	0.36	<0.02	1.08	-	<0.02	<0.1	0.09	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.44	1.7
SW026	8/04/2019	Field_D	EB1909638	-	0.141	-	0.331	-	0.579	-	-	0.072	0.108	0.052	0.0199	0.0372	-	-	-	-	-	-	<0.001	0.003	0.008	<0.001	-	-	-	-	-	-	-	0.91	-
SW026	8/04/2019	Interlab_D	RN1230420	-	0.11	0.055	0.41	0.015	0.64	<0.01	<0.01	0.11	0.11	0.088	0.023	0.035	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.02	<0.05	-	-
SW026	8/04/2019	Normal	EB1909636	-	0.149	-	0.423	-	0.6	-	-	0.081	0.124	0.0642	0.0193	0.0353	-	-	-	-	-	-	<0.001	0.002	0.007	<0.001	-	-	-	-	-	-	-	1.02	-
SW026	25/02/2020	Normal	EB2005415	-	0.03	0.02	0.19	<0.02	0.31	-	<0.02	<0.1	0.06	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.5	0.66
SW026	23/03/2021	Normal	EB2108522	-	0.08	0.05	0.31	0.02	0.76	-	<0.02	<0.1	0.13	0.05	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.07	1.43
SW027	11/08/2015	Normal	EB1525621	-	-	-	-	-	1.94	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW027	3/05/2016	Normal	EB1611799	-	-	-	-	-	0.66	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-
SW027	1/02/2017	Normal	EB1702117	-	0.07	0.03	0.17	<0.02	0.66	-	<0.02	<0.1	0.03	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.83	0.98
SW027	22/03/2017	Normal	EB1710122	-	0.06	0.03	0.27	<0.02	0.53	-	<0.02	<0.1	0.07	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.8	0.98
SW027	8/04/2019	Field_D	EB1909638	-	0.126	-	0.398	-	0.824	-	-	<0.002	0.115	0.0306	0.0199	0.0451	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	1.22	-
SW027	8/04/2019	Interlab_D	RN1230420	-	0.095	0.058	0.42	0.019	0.75	<0.01	<0.01	<0.05	0.1	0.045	0.019	0.043	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.02	<0.05	-	-
SW027	8/04/2019	Normal	EB1909636	-	0.129	-	0.418	-	0.7	-	-	0.052	0.115	0.0292	0.0193	0.0455	-	-	-	-	-	-	<0.001	0.001	0.001	<0.001	-	-	-	-	-	-	-	1.12	-
SW027	25/02/2020	Normal	EB2005415	-	0.05	0.05	0.38	0.04	1.46	-	<0.02	<0.1	0.13	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.84	2.15
SW027	23/03/2021	Normal	EB2108522	-	<0.02	<0.02	0.08	<0.02	0.4	-	<0.02	<0.1	0.03	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.48	0.51
SW028	8/05/2017	Normal	EB1709218	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01
SW028	9/04/2019	Normal	EB1909663	-	0.0225	-	0.0113	-	0.0128	-	-	<0.002	0.0204	0.0207	0.0037	0.0143	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	0.0241	-
SW028	23/03/2020	Normal	EB2008693	-	<0.02	<0.02	<0.02	<0.02	0.01	-	<0.02	<0.1	<0.02	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.05
SW028	15/04/2021	Normal	EB2110967	-	<0.02	<0.02	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW029	13/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
SW030	9/08/2015	Normal	EB1525621	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW031	11/08/2015	Normal	EB1525621	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW032	11/08/2015	Normal	EB1525621	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW032	2/02/2017	Normal	EB1705587	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW032	9/04/2019	Normal	EB1909635	-	<0.0005	-	0.0006	-	0.0008	-	-	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	0.0014	-
SW032	24/03/2020	Normal	EB2008692	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW032	15/04/2021	Normal	EB2110947	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW033	22/11/2018	Normal	EB1828770	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW034	8/05/2019	Normal	EB1911739	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW035	26/07/2017	Normal	EB1715565	-	0.02	<0.02	0.06	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.18	0.24
SW035	26/07/2017	Field_D	EB1715565	-	0.02	<0.02	0.04	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.19
SW036	26/07/2017	Normal	EB1715565	-	0.02	<0.02	0.06	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	0.26
SW037	26/07/2017	Normal	EB1715565	-	0.02	<0.02	0.06	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.19	0.23
SW038	10/08/2015	Normal	EB1525621	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW039	10/08/2015	Normal	EB1525621	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW040	9/08/2015	Normal	EB1525621	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW040	29/03/2017	Normal	EB1706401	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW040	9/04/2019	Normal	EB1909663	-	<0.0005	-	<0.0005	-	<0.0003	-	-	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	<0.0003	-
SW040	23/03/2020	Field_D	EB2008693	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW040	23/03/2020	Interlab_D	RN1271386	-	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-
SW040	23/03/2020	Normal	EB2008693	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW040	12/04/2021	Field_D	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW040	12/04/2021	Interlab_D	RN1312932	-	<0.01	<0.01	0.017	<0.01	<0.02	<0.01	<0.01	<0.05	0.012	<0.02	0.011	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-
SW040	12/04/2021	Normal	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW041	9/08/2015	Normal	EB1525621	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW042	2/11/2015	Normal	EB1534033	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW043	2/11/2015	Field_D	EB1534033	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW043	2/11/2015	Interlab_D	478994	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-
SW043	2/11/2015	Normal	EB1534033	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW043	1/02/2017	Normal	EB1702117	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW043	20/04/2018	Normal	EB1809892	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW043	8/04/2019	Normal	EB1909644	-	<0.0005	<0.0005	0.0042	<0.0005	0.0044	-	<0.0005	0.035	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0086	0.0442
SW043	23/03/2020	Normal	EB2008693	-	<0.02	<0.02	<0.02	<0.02	0.01	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01
SW043	12/04/2021	Field_D	EB2110967	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW043	12/04/2021	Interlab_D	RN1312932	-	<0.01	<0.01	0.014	<0.01	<0.02	<0.01	<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	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-
SW043	12/04/2021	Normal	EB2110967	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01
SW044	10/08/2015	Normal	EB1525621	-	0.51	-	3.88	-	5.17	-	<0.02	-	0.65	-	0.08	0.16	<0.02	<0.05	0.05	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	**9.05**	-
SW045	10/08/2015	Normal	EB1525621	-	-	-	-	-	1.04	-	-	-	-	-	-	0.11	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW048	9/08/2015	Normal	EB1525621	-	-	-	-	-	0.426	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW049	15/08/2017	Normal	EB1716714	-	0.08	0.07	0.4	<0.02	0.19	-	<0.02	0.1	0.15	0.05	0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.66	1.09
SW049	15/08/2017	Normal	EB1716714	-	-	0.1	0.49	-	0.26	-	-	-	0.25	0.06	-	0.03	-	-	-	-	-	-	-	0.34	-	-	-	-	-	-	-	-	-	0.68	1.64
SW050	12/10/2015	Field_D	EB1531260	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW050	12/10/2015	Interlab_D	475642	-	-	-	-	-	0.02	-	-	-	-	-	-	0.03	-	-	-	-	-	-	-	<0.05	<0.01	-	-	-	-	-	-	-	-	-	-
SW050	12/10/2015	Normal	EB1531260	-	-	-	-	-	<0.02	-	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
SW051	22/03/2017	Normal	EB1705908	-	0.06	0.04	0.41	<0.02	0.62	-	<0.02	0.2	0.22	0.14	0.16	0.26	0.27	0.27	0.23	<0.05	<0.02	0.3	<0.05	0.11	0.3	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.03	3.59
SW052	15/08/2017	Normal	EB1716714	-	0.07	0.06	0.29	<0.02	0.18	-	<0.02	0.1	0.13	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.51	0.86
SW052	15/08/2017	Normal	EB1716714	-	0.08	0.08	0.45	-	0.22	-	-	-	0.26	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.63	1.23
SW053	31/03/2016	Normal	EB1608609	-	<0.02	-	<0.02	-	<0.01	-	<0.02	-	<0.02	-	<0.02	0.01	<0.02	<0.05	<0.02	<0.5	<0.05	<0.05	-	<0.1	<0.1	-	<0.02	<0.5	-	<0.5	<0.05	-	<0.5	<0.02	-
SW054	13/04/2016	Normal	EB1609928	-	<0.02	<0.02	<0.02	<0.02	0.06	-	<0.02	<0.1	<0.02	<0.02	<0.02	0.03	0.03	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.01
SW055	21/09/2016	Field_D	EB1623093	-	-	-	0.02	-	0.02	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	0.04	-
SW055	21/09/2016	Interlab_D	516992	-	-	-	0.03	-	0.04	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	0.07	-
SW055	21/09/2016	Normal	EB1623093	-	-	-	0.03	-	0.01	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	0.04	-
SW056	2/02/2017	Normal	EB1702117	-	0.04	<0.02	0.11	<0.02	0.17	-	<0.02	<0.1	0.04	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.28	0.58
SW056	23/04/2018	Normal	EB1810404	-	<0.02	<0.02	0.08	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	0.24
SW056	24/03/2020	Normal	EB2008692	-	<0.02	<0.02	<0.02	<0.02	0.04	-	<0.02	<0.1	<0.02	<0.05	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04
SW056	15/04/2021	Normal	EB2110947	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS
Limit of Reporting				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
PFAS NEMP 2020 Freshwater 99%				0.001	0.0005	0.0005	0.0005	0.0005	0.0001	0.001	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	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0003	0.0003
PFAS NEMP 2020 Recreational Water									0.00023							19																			
																10																			**2**	
Location	**Date**	**Sample Type**	**Lab Report**																																	
SW057	2/02/2017	Normal	EB1705587	-	0.15	0.08	0.63	0.06	6.26	-	<0.02	<0.1	0.57	0.77	0.51	0.94	1.18	0.02	1.07	<0.05	<0.02	0.16	<0.05	0.82	0.66	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**6.89**	13.9
SW057	22/03/2017	Normal	EB1710122	-	0.03	<0.02	0.24	<0.02	1.09	-	<0.02	<0.1	0.14	0.07	0.12	0.23	0.28	0.05	0.25	<0.05	<0.02	0.1	<0.05	0.16	0.25	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.33	3.01
SW057	9/04/2019	Normal	EB1909635	-	0.044	-	0.202	-	0.466	-	-	0.091	0.12	0.0704	0.0777	0.131	-	-	-	-	-	-	<0.001	0.023	0.053	<0.001	-	-	-	-	-	-	-	0.668	-
SW057	24/03/2020	Normal	EB2008692	-	0.04	<0.02	0.09	<0.02	0.17	-	<0.02	0.19	0.1	0.19	0.06	0.04	0.08	0.04	0.03	<0.05	<0.02	0.07	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.26	1.1
SW058	7/02/2017	Normal	EB1702767	-	<0.02	<0.02	<0.02	<0.02	0.02	-	<0.02	<0.1	0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.09
SW059	7/02/2017	Field_D	EB1702767	-	<0.02	<0.02	0.02	<0.02	0.02	-	<0.02	<0.1	0.02	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.12
SW059	7/02/2017	Normal	EB1702767	-	<0.02	<0.02	<0.02	<0.02	0.02	-	<0.02	<0.1	0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.09
SW059	7/02/2017	Interlab_D	AECO06_170216	-	<0.01	-	<0.02	-	0.025	-	<0.02	<0.05	0.017	0.027	<0.01	<0.02	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	0.025	-
SW059	24/03/2020	Normal	EB2008683	-	<0.02	<0.02	<0.02	<0.02	0.01	-	<0.02	<0.1	<0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.03
SW059	20/04/2021	Normal	EB2110958	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03
SW060	7/02/2017	Normal	EB1702767	-	<0.02	<0.02	<0.02	<0.02	0.02	-	<0.02	<0.1	0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.09
SW061	7/02/2017	Normal	EB1702767	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.1	0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	0.05
SW062	7/02/2017	Normal	EB1702767	-	<0.02	<0.02	<0.02	<0.02	0.02	-	<0.02	<0.1	0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.09
SW063	22/03/2017	Normal	EB1705908	-	0.04	0.03	0.3	<0.02	0.69	-	<0.02	0.2	0.25	0.22	0.19	0.4	0.53	0.46	0.46	<0.05	0.04	0.46	<0.05	0.16	0.73	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.99	5.16
SW063	8/04/2019	Normal	EB1909644	-	0.0042	0.0023	0.0265	0.0032	0.139	-	0.0022	0.004	0.0084	0.0048	0.0059	0.0125	0.0115	0.0033	0.0111	<0.0005	0.0006	0.0061	<0.001	0.002	0.012	<0.001	0.0015	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.166	0.261
SW063	25/02/2020	Normal	EB2005415	-	0.18	0.18	1.27	0.06	0.51	-	<0.02	<0.10	0.69	0.36	0.2	0.21	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.78	3.66
SW063	23/03/2021	Normal	EB2108522	-	<0.02	<0.02	0.08	<0.02	0.29	-	<0.02	<0.1	0.08	0.04	0.03	0.04	0.04	0.02	0.04	<0.05	<0.02	0.02	<0.05	<0.05	0.13	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.37	0.81
SW064	22/03/2017	Normal	EB1705908	-	0.1	0.07	0.5	<0.02	0.69	-	<0.02	<0.1	0.12	<0.02	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.19	1.54
SW065	24/03/2017	Field_D	EB1705969	-	0.2	0.11	0.94	0.06	3.28	-	<0.02	<0.1	0.2	<0.02	0.08	0.18	0.09	0.03	0.08	<0.05	<0.02	0.07	<0.05	<0.05	0.23	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.22**	5.55
SW065	24/03/2017	Interlab_D	AECO06_170329_1	-	0.11	-	0.76	-	2.4	-	<0.02	<0.05	0.16	0.11	0.061	0.14	0.067	0.027	0.043	0.055	<0.05	0.089	-	<0.05	0.22	-	<0.02	-	-	-	-	-	-	**3.16**	-
SW065	24/03/2017	Normal	EB1705969	-	0.21	0.11	0.92	0.07	3.19	-	<0.02	<0.1	0.2	<0.02	0.08	0.18	0.09	0.04	0.07	<0.05	<0.02	0.06	<0.05	<0.05	0.21	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.11**	5.43
SW065	9/04/2019	Normal	EB1909663	-	<0.0005	-	0.0012	-	0.0053	-	-	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	0.0065	-
SW065	25/02/2020	Normal	EB2005415	-	0.62	0.6	4.29	0.13	1.47	-	<0.02	<0.10	1.04	0.24	0.14	0.19	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**5.76**	8.72
SW065	23/03/2021	Normal	EB2108522	-	0.1	0.04	0.22	<0.02	0.31	-	<0.02	<0.1	0.08	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.53	0.76
SW066	27/01/2017	Normal	EB1701752	-	0.15	0.15	1.44	0.08	3.08	-	0.1	<0.1	0.24	0.1	0.07	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.52**	5.59
SW066	24/03/2017	Normal	EB1705969	-	0.22	0.11	0.72	0.04	2.06	-	<0.02	<0.1	0.18	<0.02	0.03	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.78**	3.42
SW066	9/04/2019	Normal	EB1909663	-	0.134	-	0.4	-	0.33	-	-	<0.002	0.12	0.0592	0.0158	0.0308	-	-	-	-	-	-	<0.002	0.012	0.009	<0.002	-	-	-	-	-	-	-	0.73	-
SW066	25/02/2020	Normal	EB2005415	-	0.05	0.04	0.26	<0.02	0.31	-	<0.02	<0.10	0.09	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.57	0.84
SW066	23/03/2021	Normal	EB2108522	-	0.07	0.06	0.32	0.02	0.96	-	<0.02	<0.1	0.13	0.04	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.28	1.66
SW066	4/06/2021	Field_D	EB2116620	-	0.14	0.06	0.55	0.03	0.64	-	<0.02	<0.1	0.13	0.07	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.19	1.68
SW066	4/06/2021	Normal	EB2116620	-	0.15	0.07	0.6	0.03	0.7	-	<0.02	<0.1	0.15	0.06	0.02	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.3	1.83
SW066	4/06/2021	Normal	EB2116620	-	0.13	0.07	0.57	0.03	0.56	-	<0.02	<0.1	0.14	0.07	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.13	1.63
SW066	4/06/2021	Normal	EB2116620	-	0.12	0.07	0.55	0.02	0.56	-	<0.02	<0.1	0.14	0.07	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.11	1.57
SW066	4/06/2021	Normal	EB2116620	-	0.12	0.07	0.56	0.03	0.58	-	<0.02	<0.1	0.14	0.07	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.14	1.63
SW066	4/06/2021	Normal	EB2116620	-	0.1	0.06	0.5	0.03	0.61	-	<0.02	<0.1	0.12	0.06	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.11	1.54
SW066	4/06/2021	Normal	EB2116620	-	0.08	0.05	0.4	0.02	0.57	-	<0.02	<0.1	0.09	0.04	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.97	1.29
SW066	4/06/2021	Normal	EB2116620	-	0.08	0.04	0.38	0.02	0.55	-	<0.02	<0.1	0.08	0.04	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.93	1.23
SW066	4/06/2021	Normal	EB2116620	-	0.08	0.04	0.37	0.02	0.55	-	<0.02	<0.1	0.09	0.04	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.92	1.23
SW066	4/06/2021	Normal	EB2116620	-	0.07	0.04	0.36	0.02	0.56	-	<0.02	<0.1	0.08	0.04	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.92	1.2
SW066	4/06/2021	Normal	EB2116620	-	0.08	0.04	0.35	<0.02	0.55	-	<0.02	<0.1	0.08	0.04	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.9	1.18
SW066	6/06/2021	Interlab_D	RN1318856	-	0.12	0.071	0.57	0.019	0.49	<0.01	<0.01	0.13	0.12	0.075	0.028	0.042	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-
SW067	2/02/2017	Normal	EB1702117	-	0.14	0.13	0.86	0.06	2.32	-	<0.02	<0.1	0.17	0.12	0.05	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	0.11	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.18**	4.05
SW067	24/03/2017	Normal	EB1705969	-	0.27	0.16	1.11	0.07	2.78	-	<0.02	<0.1	0.26	<0.02	0.05	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.89**	4.81
SW068	28/03/2017	Normal	EB1706327	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW069	4/04/2017	Normal	EB1712197	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09
SW070	4/04/2017	Normal	EB1712197	-	<0.02	<0.02	0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07
SW071	11/04/2017	Interlab_D	AECO06/170505	-	<0.01	-	<0.02	-	<0.02	-	<0.02	<0.05	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	-	<0.05	<0.05	-	<0.02	-	-	-	-	-	-	-	-
SW071	11/04/2017	Field_D	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW071	11/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW072	11/04/2017	Normal	EB1708845	-	<0.02	<0.02	<0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07
SW073	11/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02
SW074	11/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW075	12/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW076	12/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW077	12/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW078	12/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW079	12/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW080	12/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW081	12/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW082	12/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW083	12/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW084	13/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06
SW085	13/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW086	13/04/2017	Normal	EB1708845	-	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01
SW091	5/07/2021	Normal	EB2118846	-	0.42	0.46	5.01	0.3	4.81	-	<0.10	<0.5	0.82	0.14	0.2	0.7	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	**8.69**	12.9
SW091	5/07/2021	Normal	EB2118846	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**9.82**	-
SW092	18/06/2021	Field_D	EB2117549	-	0.1	0.03	0.33	0.02	1.91	-	0.06	0.4	1.48	0.66	0.06	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.24**	5.08
SW092	18/06/2021	Interlab_D	RN1320070	-	0.092	0.045	0.36	<0.01	1.3	<0.01	<0.01	0.42	0.98	0.6	0.033	0.017	0.01	<0.01	<0.01	<0.02	<0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.01	<0.05	-	-

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
				Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS
Limit of Reporting				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
PFAS NEMP 2020 Freshwater 99%				0.001	0.0005	0.0005	0.0005	0.0005	0.0001	0.001	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0003	0.0003
PFAS NEMP 2020 Recreational Water									0.00023							19																			
																10																		**2**	
Location	**Date**	**Sample Type**	**Lab Report**																																
SW092	18/06/2021	Normal	EB2119024	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	0.3	1.18	0.53	0.04	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	2.05
SW092	18/06/2021	Normal	EB2117541	-	0.03	0.04	0.31	0.02	1.44	-	0.06	0.4	1.48	0.68	0.06	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.75	4.55
SW092	18/06/2021	Normal	EB2117541	-	0.68	0.19	1.36	0.03	4.45	-	0.11	2.5	2.31	2.14	0.07	0.03	0.02	<0.02	<0.02	<0.05	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**5.81**	13.9
SW092	18/06/2021	Normal	EB2117541	-	0.78	0.21	1.34	0.03	2.7	-	0.06	2.8	2.35	2.32	0.07	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.04**	12.7
SW092	18/06/2021	Normal	EB2117541	-	1.3	0.45	3.82	0.19	13.2	-	0.06	3.6	3.14	2.9	0.09	0.07	0.03	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**17**	28.9
SW093	18/06/2021	Normal	EB2119024	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	0.3	1.15	0.53	0.04	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	2.02
SW093	18/06/2021	Normal	EB2117541	-	0.26	0.07	0.39	0.02	6.98	-	0.55	0.8	1.54	0.93	0.06	0.02	0.03	<0.02	0.02	<0.05	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**7.37**	11.7
SW093	18/06/2021	Normal	EB2117549	-	0.12	0.03	0.12	<0.02	4.08	-	0.28	0.6	1.49	0.8	0.06	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.2**	7.58
SW093	18/06/2021	Normal	EB2117549	-	0.06	<0.02	0.06	<0.02	2.22	-	0.15	0.4	1.38	0.67	0.04	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.28**	4.98
SW093	18/06/2021	Normal	EB2117549	-	0.05	<0.02	0.05	<0.02	1.57	-	0.03	0.5	1.38	0.66	0.05	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.62	4.29
SW094	17/06/2021	Normal	EB2119024	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	0.3	1.15	0.53	0.04	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	2.02
SW094	17/06/2021	Normal	EB2117541	-	<0.02	<0.02	<0.02	<0.02	0.02	-	<0.02	0.4	1.43	0.64	0.09	0.1	0.08	0.07	0.08	0.05	0.03	0.07	<0.05	0.08	2.12	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	5.26
SW094	17/06/2021	Normal	EB2117541	-	0.02	<0.02	0.04	<0.02	0.15	-	<0.02	1.7	1.36	1.13	0.06	0.03	0.1	0.09	0.02	<0.05	0.02	0.08	<0.05	<0.05	0.14	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.19	4.94
SW094	17/06/2021	Normal	EB2117541	-	<0.02	<0.02	0.03	<0.02	0.16	-	<0.02	1.2	1.4	0.92	0.06	0.02	0.1	0.07	0.02	<0.05	0.02	0.07	<0.05	<0.05	0.16	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.19	4.23
SW094	17/06/2021	Normal	EB2117541	-	<0.02	<0.02	0.02	<0.02	0.1	-	<0.02	0.9	1.32	0.81	0.06	0.01	0.05	0.02	<0.02	<0.05	<0.02	0.03	<0.05	<0.05	0.08	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	3.4
SW095	17/06/2021	Normal	EB2119024	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	0.3	1.18	0.53	0.04	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	2.05
SW095	17/06/2021	Normal	EB2117541	-	<0.02	<0.02	0.07	<0.02	0.23	-	<0.02	0.8	1.41	1.28	0.88	0.94	0.61	1.78	0.8	2.17	1.66	0.61	<0.05	0.52	0.98	0.11	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	14.8
SW095	17/06/2021	Normal	EB2117541	-	0.02	<0.02	0.13	<0.02	0.34	-	<0.02	0.8	1.61	1.8	0.35	0.23	0.24	0.58	0.19	0.58	0.48	0.25	<0.05	0.12	0.21	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.47	7.93
SW095	17/06/2021	Normal	EB2117541	-	0.02	<0.02	0.07	<0.02	0.07	-	<0.02	0.6	1.44	0.86	0.08	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	3.16
SW095	17/06/2021	Normal	EB2117541	-	<0.02	<0.02	0.06	<0.02	0.08	-	<0.02	0.5	1.42	0.86	0.08	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	3.02
SW096	16/06/2021	Field_D	EB2117549	-	0.3	0.11	0.66	<0.05	6.11	-	0.38	1.1	1.89	1.16	0.1	0.14	0.08	<0.05	0.06	<0.12	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	0.12	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**6.77**	12.3
SW096	16/06/2021	Interlab_D	RN1320070	-	0.36	0.12	0.73	0.048	6.3	0.15	0.19	1.3	1.2	1.2	0.055	0.15	0.11	0.019	0.064	<0.02	<0.02	0.039	<0.01	0.017	0.099	<0.01	0.11	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-
SW096	16/06/2021	Normal	EB2119024	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	0.3	1.18	0.55	0.04	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	2.07
SW096	16/06/2021	Normal	EB2117549	-	0.46	0.13	0.81	0.06	8.25	-	0.15	1.4	1.98	1.4	0.1	0.19	0.12	<0.05	0.09	<0.12	<0.05	<0.05	<0.05	<0.05	0.1	<0.05	0.12	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**9.06**	15.4
SW096	16/06/2021	Normal	EB2117549	-	0.26	0.08	0.31	0.02	2.57	-	0.31	1.2	1.68	1.14	0.06	0.06	0.04	<0.02	0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.88**	7.79
SW096	16/06/2021	Normal	EB2117549	-	0.18	0.04	0.16	<0.02	1.47	-	0.18	0.9	1.57	0.97	0.05	0.03	0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.63	5.59
SW096	16/06/2021	Normal	EB2117549	-	0.11	0.03	0.13	<0.02	1.09	-	0.14	0.7	1.47	0.84	0.05	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.22	4.58
SW097	17/06/2021	Normal	EB2119024	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	0.3	1.17	0.54	0.04	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	2.05
SW097	17/06/2021	Normal	EB2117541	-	0.25	0.06	0.6	0.02	1.43	-	0.3	2.9	1.84	2.39	0.07	0.02	0.04	0.15	<0.02	<0.05	0.04	0.12	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.03**	10.2
SW097	17/06/2021	Normal	EB2117541	-	1.04	0.31	2.81	0.1	5.61	-	0.34	7.3	3.78	4.98	0.18	0.22	0.08	0.04	0.05	<0.05	<0.02	0.04	<0.05	<0.05	0.11	<0.05	0.04	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**8.42**	27
SW097	17/06/2021	Normal	EB2117541	-	0.73	0.21	2	0.08	3.35	-	0.23	5.1	3	3.67	0.14	0.14	0.06	0.02	0.03	<0.05	<0.02	0.03	<0.05	<0.05	0.06	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**5.35**	18.9
SW097	17/06/2021	Normal	EB2117541	-	0.45	0.13	1.37	0.06	2.79	-	0.19	3.3	2.33	2.49	0.1	0.09	0.04	0.03	0.02	<0.05	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.16**	13.4
SW098	16/06/2021	Normal	EB2117541	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	0.4	1.35	0.62	0.05	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	2.42
SW098	16/06/2021	Normal	EB2117541	-	0.11	0.06	0.5	0.04	2.45	-	<0.02	0.5	1.59	0.86	0.08	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.04	<0.05	**2.95**	6.28
SW098	16/06/2021	Normal	EB2117541	-	0.1	0.06	0.42	0.02	0.57	-	<0.02	0.4	1.52	0.75	0.06	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.99	3.93
SW098	16/06/2021	Normal	EB2117541	-	0.02	<0.02	0.12	<0.02	0.14	-	<0.02	0.4	1.38	0.61	0.05	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.26	2.72
SW098	16/06/2021	Normal	EB2117541	-	<0.02	<0.02	0.06	<0.02	0.1	-	<0.02	0.4	1.46	0.65	0.05	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	2.72
SW099	16/06/2021	Normal	EB2119024	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	0.3	1.2	0.54	0.04	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	2.08
SW099	16/06/2021	Normal	EB2117541	-	2.48	0.92	4.84	0.15	3.34	-	<0.05	19	5	11.4	0.1	0.12	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**8.18**	47.4
SW099	16/06/2021	Normal	EB2117541	-	2.96	1.2	6.08	0.13	2.25	-	<0.05	11.6	6.83	10.9	0.16	0.24	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**8.33**	42.4
SW099	16/06/2021	Normal	EB2117541	-	2.71	1.14	5.43	0.09	1.47	-	<0.04	10.1	6.84	10.1	0.16	0.21	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	**6.9**	38.2
SW099	16/06/2021	Normal	EB2117541	-	1.37	0.54	2.85	0.07	0.81	-	<0.04	5.9	4.62	6.54	0.1	0.12	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	**3.66**	22.9
SW100	16/06/2021	Field_D	EB2117549	-	0.06	0.05	1.03	0.14	8.14	-	<0.05	0.5	1.4	0.76	0.09	0.1	<0.05	<0.05	0.05	<0.12	<0.05	<0.05	<0.05	<0.05	0.12	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**9.17**	12.4
SW100	16/06/2021	Interlab_D	RN1320070	-	0.042	0.039	0.94	0.11	5	<0.01	<0.01	0.38	1.1	0.61	0.056	0.068	0.014	<0.01	0.021	<0.02	<0.02	<0.01	<0.01	0.012	0.078	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-
SW100	16/06/2021	Normal	EB2119024	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	0.3	1.2	0.54	0.04	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	2.08
SW100	16/06/2021	Normal	EB2117541	-	0.05	0.07	1.08	0.18	9.32	-	<0.04	0.4	1.4	0.78	0.08	0.08	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.05	<0.05	0.08	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	**10.4**	13.5
SW100	16/06/2021	Normal	EB2117541	-	0.06	0.08	1.52	0.24	10.6	-	<0.04	0.4	1.41	0.77	0.1	0.11	<0.04	<0.04	0.05	<0.10	<0.04	<0.04	<0.05	<0.05	0.1	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	**12.1**	15.4
SW100	16/06/2021	Normal	EB2117541	-	<0.04	0.05	0.88	0.17	8.03	-	<0.04	0.4	1.36	0.71	0.07	0.06	<0.04	<0.04	<0.04	<0.10	<0.04	<0.04	<0.05	<0.05	0.06	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	**8.91**	11.8
SW101	16/06/2021	Normal	EB2119024	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	0.3	1.17	0.53	0.04	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	2.04
SW101	16/06/2021	Normal	EB2117541	-	<0.02	<0.02	0.1	<0.02	0.41	-	<0.02	0.4	1.55	0.88	0.27	0.09	<0.02	<0.02	0.02	<0.05	<0.02	<0.02	<0.05	0.07	0.33	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.51	4.12
SW101	16/06/2021	Normal	EB2117541	-	<0.02	<0.02	<0.02	<0.02	0.02	-	<0.02	0.4	1.37	0.61	0.06	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	2.46
SW101	16/06/2021	Normal	EB2117541	-	<0.02	<0.02	<0.02	<0.02	0.04	-	<0.02	0.3	1.35	0.66	0.06	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	2.41
SW101	16/06/2021	Normal	EB2117541	-	<0.02	<0.02	<0.02	<0.02	0.23	-	<0.02	0.3	1.35	0.62	0.05	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.23	2.55
SW621	3/12/2019	Normal	EB1932828	-	1.18	0.403	3.79	0.17	17.3	-	0.158	<0.016	1.94	0.992	0.0528	0.205	<0.0160	<0.0160	<0.0160	<0.0400	<0.0160	<0.0160	<0.016	<0.016	<0.016	<0.016	0.0656	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	**21.1**	26.2
SW626	5/12/2019	Normal	EB1932828	-	0.281	0.12	0.928	0.0717	5.87	-	0.049	0.015	0.331	0.325	0.0198	0.0661	0.0133	0.0029	0.0134	<0.0040	<0.0016	0.0133	<0.002	<0.002	0.002	<0.002	0.0173	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	**6.8**	8.14
SW626	5/12/2019	Normal	EB1932828	-	0.102	0.0533	0.461	0.0334	2.72	-	0.0251	0.009	0.114	0.113	0.0082	0.0275	0.0042	0.0034	0.005	<0.0040	<0.0016	0.0077	<0.002	<0.002	<0.002	<0.002	0.0096	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	**3.18**	3.7
SW628	4/12/2019	Normal	EB1932828	-	2.28	0.922	6.04	0.322	21.9	-	0.131	<0.016	1.82	0.931	0.048	0.166	<0.0160	<0.0160	<0.0160	<0.0400	<0.0160	<0.0160	<0.016	<0.016	<0.016	<0.016	0.136	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	**27.9**	34.7
SW628	4/12/2019	Normal	EB1932828	-	0.683	0.309	2.58	0.13	9.92	-	0.109	<0.016	0.563	0.259	0.0176	0.056	<0.0160	<0.0160	<0.0160	<0.0400	<0.0160	<0.0160	<0.016	<0.016	<0.016	<0.016	0.102	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	**12.5**	14.7
SW629	4/12/2019	Normal	EB1932828	-	2	1.18	7.59	0.434	43.4	-	0.45	<0.016	1.93	0.936	0.101	0.306	0.056	0.016	0.0272	<0.0400	<0.0160	0.088	<0.016	0.026	0.027	<0.016	0.621	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	**51**	59.2
SW629	4/12/2019	Normal	EB1932828	-	1.37	0.771	5.49	0.342	36.4	-	0.52	<0.016	1.29	0.642	0.0704	0.219	0.0464	<0.0160	0.0224	<0.0400	<0.0160	0.0944	<0.016	0.016	0.034	<0.016	0.674	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	**41.9**	48
SW635	4/12/2019	Normal	EB1932828	-	0.554	0.328	3.12	0.202	14.5	-	0.0432	<0.016	0.603	0.363	0.0192	0.0544	<0.0160	<0.0160	<0.0160	<0.0400	<0.0160	0.016	<0.016	<0.016	<0.016	<0.016	0.0464	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	**17.6**	19.8
SW635	4/12/2019	Normal	EB1932828	-	1.35	0.766	5.7	0.286	15.5	-	0.0454	<0.002	1.39	0.876	0.0331	0.0982	0.0118	0.0096	0.0165	<0.0040	<0.0016	0.0189	<0.002	<0.002	0.009	<0.002	0.0299	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	**21.2**	26.1
SW636	5/12/2019	Field_D	EB1932828	-	1.42	1.54	29.5	1.1	130	-	1.54	<0.016	9.29	1.69	0.43	2	0.917	0.182	0.242	<0.0400	<0.0160	0.323	<0.016	0.12	1.31	1.14	1.25	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	**160**	184
SW636	5/12/2019	Interlab_D	692172	0.95	1.6	1.3	31	0.73	88	0.83	<0.001	1	9.8	2.9	0.51	2.2	0.86	0.19	0.37	0.61	0.27	0.25	<0.1	0.21	1.7	0.33	0.55	<0.1	0.15	<0.1	<0.1	0.12	<0.1	**119**	146.43
SW636	5/12/2019	Normal	EB1932828	-	1.1	1.19	26	0.89	116	-	0.941	0.018	7.28	1.24	0.349	1.74	0.922	0.0864	0.227	<0.0400	<0.0160	0.205	<0.016	0.091	1.28	0.552	0.928	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	**142**	161
SW636	5/12/2019	Normal	EB1932828	-	0.322	0.365	10.2	0.376	71.2	-	0.611	<0.016	2.21	0.358	0.13	0.832	0.654	0.0448	0.131	<0.0400	<0.0160	0.163	<0.016	0.043	0.877	0.336	1.17	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	**81.4**	90
SW638	5/12/2019	Field_D	EB1932828	-	0.33	0.0979	0.593	0.0469	4.11	-	0.0464	0.107	0.314	0.237	0.009	0.0309	0.005	0.0026	0.0038	<0.0040	<0.0016	0.0066	<0.002	<0.002	<0.002	<0.002	0.0328	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	**4.7**	5.97
SW638	5/12/2019	Interlab_D	692172	0.40	0.37	0.12	0.76	<0.1	4.5	<0.1	<0.001	0.25	0.38	0.26	<0.1	<0.1	<0.1	<0.1	<0.1	0.19	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**5.26**	7.33
SW638	5/12/2019	Normal	EB1932828	-	0.78	0.206	1.13	0.087	8.65	-	0.0776	0.237	0.753	0.562	0.0176	0.0547	0.0082	0.0024	0.0058	<0.0040	<0.0016	0.009	<0.002	<0.002	0.004	<0.002	0.0483	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	**9.78**	12.6
SW638	5/12/2019	Normal	EB1932828	-	0.343	0.106	0.633	0.0525	5.15	-	0.0678	0.149	0.337	0.254	0.009	0.0304	0.0043	0.0022	0.0032	<0.0040	<0.0016	0.0062	<0.002	<0.002	<0.002	<0.002	0.0328	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	**5.78**	7.18
SW639	4/12/2019	Normal	EB1932828	-	1.45	0.707	4.21	0.384	16	-	0.291	0.106	1.2	0.666	0.048	0.109	0.0336	<0.0160	<0.0160	<0.0400	<0.0160	0.056	<0.016	<0.016	<0.016	<0.016	0.258	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	**20.2**	25.5
SW639	4/12/2019	Normal	EB1932828	-	0.838	0.432	2.76	0.285	10.1	-	0.179	<0.016	0.64	0.368	0.0272	0.0672	0.0224	<0.0160	<0.0160	<0.0400	<0.0160	0.04	<0.016	<0.016	<0.016	<0.016	0.146	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	**12.9**	15.9
SW639	4/12/2019	Normal	EB1932828	-	-	-	3.01	0.33	14.7	-	0.2	-	-	-	-	0.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**17.7**	26
SW646	5/12/2019	Normal	EB1932828	-	2.44	1.48	8.64	0.82	43.8	-	0.227	<0.016	2.17	0.939	0.088	0.267	<0.0160	<0.0160	<0.0160	<0.0400	<0.0160	<0.0160	<0.016	<0.016	<0.016	<0.016	0.125	<0.040	<0.0160	<0.040	<0.040	<0.0160	<0.040	**53.9**	62.6
SW646	5/12/2019	Normal	EB1932828	-	-	-	10.1	0.949	54.4	-	0.36	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**63**	79.5
SW646	5/12/2019	Normal	EB1932828	-	0.486	0.265	1.74	0.238	15.1	-	0.116	0.04	0.412	0.213	0.0158	0.0533	0.0046	0.0034	0.0043	<0.0040	<0.0016	0.0098	<0.002	<0.002	<0.002	<0.002	0.146	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	**16.8**	18.8

					PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	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
				Limit of Reporting	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	0.0005	0.0005	0.0005	0.0002	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.0002
Location Code	Depth	Date	Sample Type	Lab Report																													
SD001	0.1	29/10/2014	Field_D	EB1445388	-	-	-	-	0.0024	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0024	-
SD001	0.1	29/10/2014	Interlab_D	437530	-	-	-	-	<0.005	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	<0.005	<0.005	-	-	-	-	-	-	-	<0.005	-
SD001	0.1	29/10/2014	Normal	EB1445388	-	-	-	-	0.0023	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0023	-
SD002	0.1	29/10/2014	Normal	EB1445388	-	-	-	-	0.0029	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0029	-
SD002	0.1	11/08/2015	Normal	EB1525621	-	-	-	-	0.0024	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0024	-
SD002	0.1	3/05/2017	Normal	EB1709222	<0.0002	<0.0002	0.0005	<0.0002	0.0056	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0061	0.0064
SD003	0.1	17/11/2014	Normal	EB1446505	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	<0.0005	-
SD003	0.1	1/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0002	<0.0002	0.0036	0.0003	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0038	0.0044
SD004	0.1	17/11/2014	Normal	EB1446505	-	-	-	-	0.0056	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0056	-
SD004	0.1	1/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0004	<0.0002	0.0139	0.0002	<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	<0.0005	<0.0005	0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0143	0.0147
SD005	0.1	17/11/2014	Field_D	EB1446505	-	-	-	-	0.0064	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0064	-
SD005	0.1	17/11/2014	Interlab_D	439475	-	-	-	-	0.016	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	<0.005	<0.005	-	-	-	-	-	-	-	0.016	-
SD005	0.1	17/11/2014	Normal	EB1446505	-	-	-	-	0.0045	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0045	-
SD006	0.1	8/04/2015	Normal	ES1508218	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	<0.0005	-
SD006	0.4	8/04/2015	Normal	ES1508218	-	-	-	-	0.0012	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0012	-
SD006	0.1	1/02/2017	Normal	EB1702117	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0007	0.0007
SD007	0.1	8/04/2015	Normal	ES1508218	-	-	-	-	0.0019	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0019	-
SD007	0.5	8/04/2015	Normal	ES1508218	-	-	-	-	0.0007	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0007	-
SD007	0.1	2/11/2015	Field_D	EB1534033	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	<0.0005	-
SD007	0.1	2/11/2015	Interlab_D	478994	-	-	-	-	<0.005	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	<0.01	<0.005	-	-	-	-	-	-	-	<0.005	-
SD007	0.1	2/11/2015	Normal	EB1534033	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	<0.0005	-
SD007	0.1	1/02/2017	Normal	EB1702117	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD008	0.1	8/04/2015	Normal	ES1508218	-	-	-	-	0.0397	-	-	-	-	-	0.0007	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0397	-
SD008	1	8/04/2015	Field_D	ES1508218	-	-	-	-	0.0402	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0402	-
SD008	1	8/04/2015	Normal	ES1508218	-	-	-	-	0.0642	-	-	-	-	-	0.0008	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0642	-
SD008	1 - 1	8/04/2015	Interlab_D	453644	-	-	-	-	0.13	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	<0.01	<0.005	-	-	-	-	-	-	-	0.13	-
SD008	1.8	8/04/2015	Normal	ES1508218	-	-	-	-	0.0913	-	-	-	-	-	0.0007	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0913	-
SD009	0.1	8/04/2015	Normal	ES1508218	-	-	-	-	0.0417	-	-	-	-	-	0.0007	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0417	-
SD009	0.5	8/04/2015	Normal	ES1508218	-	-	-	-	0.0428	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0428	-
SD010	0.1	7/04/2015	Normal	ES1508218	-	-	-	-	0.492	-	-	-	-	-	0.0079	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.492	-
SD010	0.5	7/04/2015	Normal	ES1508218	-	-	-	-	0.046	-	-	-	-	-	0.0031	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.046	-
SD011	0.1	7/04/2015	Normal	ES1508218	-	-	-	-	0.461	-	-	-	-	-	0.0051	-	-	-	-	-	-	-	<0.005	0.001	-	-	-	-	-	-	-	0.461	-
SD011	0.5	7/04/2015	Normal	ES1508218	-	-	-	-	0.0266	-	-	-	-	-	0.0014	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0266	-
SD012	0.1	7/04/2015	Normal	ES1508218	-	-	-	-	0.0558	-	-	-	-	-	0.0007	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0558	-
SD012	0.5	7/04/2015	Normal	ES1508218	-	-	-	-	0.144	-	-	-	-	-	0.0012	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.144	-
SD013	0.1	7/04/2015	Normal	ES1508218	-	-	-	-	0.0437	-	-	-	-	-	0.0021	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0437	-
SD013	0.5	7/04/2015	Normal	ES1508218	-	-	-	-	0.0057	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0057	-
SD014	0.1	7/04/2015	Normal	ES1508218	-	-	-	-	0.0019	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0019	-
SD014	0.5	7/04/2015	Field_D	ES1508218	-	-	-	-	0.0015	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0015	-
SD014	0.5	7/04/2015	Normal	ES1508218	-	-	-	-	0.0012	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0012	-
SD014	0.5 - 0.5	7/04/2015	Interlab_D	453644	-	-	-	-	<0.005	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	<0.01	<0.005	-	-	-	-	-	-	-	<0.005	-
SD015	0.1	7/04/2015	Normal	ES1508218	-	-	-	-	0.0519	-	-	-	-	-	0.0018	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0519	-
SD015	0.5	7/04/2015	Normal	ES1508218	-	-	-	-	0.0317	-	-	-	-	-	0.001	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0317	-
SD016	0.1	7/04/2015	Normal	ES1508218	-	-	-	-	0.0497	-	-	-	-	-	0.0089	-	-	-	-	-	-	-	0.006	0.021	-	-	-	-	-	-	-	0.0497	-
SD016	0.5	7/04/2015	Normal	ES1508218	-	-	-	-	0.0126	-	-	-	-	-	0.0057	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0126	-
SD017	0.1	8/04/2015	Normal	ES1508218	-	-	-	-	0.04	-	-	-	-	-	0.0023	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.04	-
SD018	0.2 - 0.2	28/01/2017	Normal	EB1701752	0.0006	0.0006	0.007	0.0005	0.0703	0.0117	<0.001	0.0013	0.0008	0.0005	0.0021	0.0006	0.0003	0.0006	<0.0005	<0.0002	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	0.0003	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.07	0.0979
SD018	0.2 - 0.2	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0773	-
SD018	0.5	28/01/2017	Normal	ES1709078	0.0017	0.0013	0.01	0.002	0.28	0.0008	0.004	0.01	0.003	0.0014	0.0054	0.0002	<0.0002	0.0008	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.29	0.32
SD018	0.5 - 0.5	28/01/2017	Normal	EB1701752	0.0026	0.0023	0.0199	0.0028	0.41	0.001	<0.001	0.0081	0.0038	0.0016	0.007	0.0003	<0.0002	0.0008	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.42	0.461
SD018	0.5 - 0.5	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4299	-
SD018	0.5 - 0.5	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.43	-
SD019	0.1	8/04/2015	Normal	ES1508218	-	-	-	-	0.0028	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0028	-
SD019	0.5	8/04/2015	Normal	ES1508218	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	<0.0005	-
SD020	0.1	8/04/2015	Normal	ES1508218	-	-	-	-	0.0006	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0006	-
SD020	0.4	8/04/2015	Normal	ES1508218	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	<0.0005	-
SD021	0.1	7/04/2015	Normal	ES1508218	-	-	-	-	0.0077	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0077	-
SD021	0.5	7/04/2015	Normal	ES1508218	-	-	-	-	0.009	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.009	-
SD022	0.1	8/04/2015	Normal	ES1508218	-	-	-	-	0.0344	-	-	-	-	-	0.0014	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0344	-
SD022	0.5	8/04/2015	Normal	ES1508218	-	-	-	-	0.0742	-	-	-	-	-	0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0742	-
SD023		12/08/2015	Normal	EB1525621	-	-	-	-	0.0322	-	-	-	-	-	0.0011	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0322	-
SD024		12/08/2015	Normal	EB1525621	-	-	-	-	0.012	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.012	-
SD025		12/08/2015	Normal	EB1525621	-	-	-	-	3.68	-	-	-	-	-	1.05	-	-	-	-	-	-	-	2.78	49.2	-	-	-	-	-	-	-	3.68	-
SD026	0.2 - 0.2	28/01/2017	Normal	EB1701752	0.0006	0.0008	0.0104	0.0018	0.152	0.0069	<0.001	0.0007	<0.0002	0.0003	0.0012	0.0002	0.0004	<0.0002	<0.0005	<0.0002	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0009	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.16	0.176
SD026	0.2 - 0.2	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1624	-
SD026	0.5 - 0.5	28/01/2017	Normal	EB1701752	0.0002	0.0003	0.0035	0.0005	0.0587	0.0053	<0.001	0.0007	0.0003	0.0002	0.0011	<0.0002	<0.0002	0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.06	0.0731
SD026	0.5 - 0.5	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0622	-
SD027	0.2 - 0.2	28/01/2017	Normal	EB1701752	0.0017	0.001	0.0108	0.0017	0.258	0.0071	<0.001	0.005	0.0027	0.0006	0.0024	0.0003	<0.0002	<0.0002	<0.0005	<0.0002	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.26	0.292
SD027	0.2 - 0.2	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2688	-
SD027	0.5 - 0.5	28/01/2017	Normal	EB1701752	0.0133	0.0105	0.153	0.0079	1.62	0.0004	<0.001	0.0865	0.0126	0.0034	0.01	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0009	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	1.77	1.92
SD027	0.5 - 0.5	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.773	-
SD028	0.2 - 0.2	28/01/2017	Normal	EB1701752	0.0025	0.002	0.0531	0.0021	0.382	0.0185	<0.001	0.0064	0.0041	0.0021	0.0063	0.0014	0.0015	0.0013	<0.0005	0.0003	0.0016	<0.0005	<0.0005	<0.0005	<0.0005	0.0022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.43	0.487
SD028	0.2 - 0.2	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4351	-
SD028	1	28/01/2017	Normal	ES1709078	0.0014	0.0008	0.02	0.0009	0.46	0.0017	0.003	0.008	0.0026	0.0011	0.0029	<0.0002	<0.0002	0.0004	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.48	0.5
SD028	1 - 1	28/01/2017	Normal	EB1701752	0.0026	0.0014	0.0464	0.0017	0.785	0.0023	<0.001	0.0094	0.0044	0.0021	0.0064	0.0003	<0.0002	0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.83	0.862
SD028	1 - 1	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8314	-
SD029	0.2 - 0.2	28/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0022	0.0003	0.0723	0.0057	<0.001	0.0019	0.0019	0.0027	0.0068	0.0191	0.0037	0.0126	<0.0005	0.0005	0.0053	<0.0005	0.0025	0.0046	<0.0005	0.0006	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.07	0.143
SD029	0.2 - 0.2	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0745	-
SD029	1 - 1	28/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0012	<0.0002	0.0374	0.0029	0.003	0.001	0.0008	0.001	0.003	0.0048	0.0008	0.0061	<0.0005	<0.0002	0.0014	<0.0005	0.0171	0.0006	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.03	0.0811
SD029	1 - 1	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0386	-
SD030	0.1	9/08/2015	Normal	EB1525621	-	-	-	-	0.0016	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0016	-

					PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	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
				Limit of Reporting	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	0.0005	0.0005	0.0002	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.0002
Location Code	**Depth**	**Date**	**Sample Type**	**Lab Report**																														
SD001	0.1	29/10/2014	Field_D	EB1445388	-	-	-	-	0.0024	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	-	0.0024	-
SD001	0.1	29/10/2014	Interlab_D	437530	-	-	-	-	<0.005	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	<0.005	<0.005	-	-	-	-	-	-	-	-	<0.005	-
SD031	0.1	11/08/2015	Normal	EB1525621	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	-	<0.0005	-
SD032	0.1	11/08/2015	Normal	EB1525621	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	-	<0.0005	-
SD032	0.1	2/02/2017	Normal	EB1705587	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD033	0.2 - 0.2	28/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0015	0.0002	0.0618	0.0035	<0.001	0.0024	0.0023	0.0029	0.0053	0.0051	0.0007	0.0083	<0.0005	<0.0002	0.0016	<0.0005	<0.0005	0.0018	<0.0005	0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.06	0.0976
SD033	0.2 - 0.2	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0633	-
SD033	1.5 - 1.5	28/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0013	<0.0002	0.0206	<0.0002	<0.001	0.0022	0.0022	0.002	0.0029	<0.0002	<0.0002	0.0024	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.02	0.0336
SD033	1.5 - 1.5	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0219	-
SD034	0.5 - 0.5	2/02/2017	Normal	EB1702117	0.0006	0.0005	0.0044	0.0006	0.0618	0.0003	<0.001	0.0015	0.0006	0.0002	0.0012	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0662	0.0717
SD034	1 - 1	2/02/2017	Normal	EB1702117	0.0137	0.0328	0.0969	0.0016	0.045	<0.0002	<0.001	0.0251	0.001	0.0052	0.0075	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.142	0.229
SD035	0.1	9/08/2015	Field_D	EB1525621	<0.0002	-	0.0005	-	0.0091	<0.0002	-	<0.0002	-	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.005	<0.001	-	0.0003	<0.001	-	<0.001	<0.001	-	<0.001	0.0096	-
SD035	0.1	9/08/2015	Interlab_D	468674	<0.005	-	<0.005	-	0.007	<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	<0.005	-	<0.005	<0.005	-	-	<0.005	-	-	0.007	-
SD035	0.1	9/08/2015	Interlab_D	468674	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0095	-
SD035	0.1	9/08/2015	Normal	EB1525621	<0.0002	-	0.006	-	0.0094	<0.0002	-	<0.0002	-	0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.005	<0.001	-	0.0006	<0.001	-	<0.001	<0.001	-	<0.001	0.0154	-
SD035	0.1	29/03/2017	Normal	EB1706401	<0.0002	<0.0002	0.0005	<0.0002	0.0153	0.0121	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.01	0.0291
SD035	0.1	29/03/2017	Normal	EB1706401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0158	-
SD036	0.1	9/08/2015	Normal	EB1525621	-	-	-	-	0.0006	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	-	0.0006	-
SD036	0.1	1/02/2017	Field_D	EB1702117	<0.0002	<0.0002	0.0005	<0.0002	0.0079	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.001	0.0022	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0084	0.0116
SD036	0.1	1/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0006	<0.0002	0.0114	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0013	0.0032	<0.0002	0.0003	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.012	0.0168
SD036	0.1	1/02/2017	Interlab_D	AECO06_170207	<0.002	-	<0.002	-	0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.005	<0.005	-	<0.002	-	-	-	-	-	-	0.005	-
SD036	0.1	1/02/2017	Interlab_D	AECO06_170207	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.006	-
SD037	0.1	9/08/2015	Normal	EB1525621	-	-	-	-	0.0032	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	-	0.0032	-
SD037	0.1	1/02/2017	Normal	EB1702117	<0.0002	<0.0002	<0.0002	<0.0002	0.0013	<0.0002	<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	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0013	0.0013
SD038	0.1	9/08/2015	Normal	EB1525621	-	-	-	-	0.0007	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	-	0.0007	-
SD038	0.1	1/02/2017	Normal	EB1702117	<0.0002	<0.0002	<0.0002	<0.0002	0.0012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	0.0003	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0012	0.0018
SD039	0.2 - 0.2	2/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0016	0.0002	0.0599	0.0013	<0.001	0.0008	<0.0002	0.0002	0.0008	<0.0002	<0.0002	0.0003	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0615	0.0651
SD039	1 - 1	2/02/2017	Normal	EB1702117	<0.0002	0.0003	0.003	0.0003	0.0887	<0.0002	<0.001	0.0007	<0.0002	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0917	0.0936
SD040	0.1	9/08/2015	Normal	EB1525621	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	-	<0.0005	-
SD040	0.1	29/03/2017	Normal	EB1706401	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	0.0004
SD040	0.1	29/03/2017	Normal	EB1706401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0005	-
SD041	0.1	9/08/2015	Normal	EB1525621	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	-	<0.0005	-
SD042	0.1	2/11/2015	Normal	EB1534033	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	-	<0.0005	-
SD042	0.1	1/02/2017	Normal	EB1702117	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD043	0.1	1/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0005	<0.0002	0.0116	<0.0002	<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	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0121	0.0121
SD044	0.1	6/02/2017	Normal	EB1702767	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD045	0.1	7/02/2017	Field_D	EB1702767	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	0.0007
SD045	0.1	7/02/2017	Field_D	EB1702767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0005	-
SD045	0.1	7/02/2017	Normal	EB1702767	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0005	0.0009
SD045	0.1	7/02/2017	Normal	EB1702767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0006	-
SD045	0.1	7/02/2017	Interlab_d	AECO06_170216	<0.002	-	<0.002	-	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.005	<0.005	-	<0.002	-	-	-	-	-	-	<0.002	-
SD046	0.1	7/02/2017	Normal	EB1702767	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0003	0.0003
SD046	0.1	7/02/2017	Normal	EB1702767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0004	-
SD047	0.1	7/02/2017	Normal	EB1702767	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	0.0004
SD047	0.1	7/02/2017	Normal	EB1702767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0005	-
SD048	0.1	7/02/2017	Normal	EB1702767	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0006	0.0006
SD048	0.1	7/02/2017	Normal	EB1702767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0007	-
SD049	0.1	11/04/2017	Interlab_D	AECO06/170505	<0.002	-	<0.002	-	<0.002	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.005	<0.005	-	<0.002	-	-	-	-	-	-	-	-
SD049	0.1	11/04/2017	Field_D	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD049	0.1	11/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD050	0.1	11/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD051	0.1	11/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD052	0.1	11/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD053	0.1	11/04/2017	Normal	EB1708845	<0.0002	<0.0002	0.0013	<0.0002	0.0072	<0.0002	<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	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0085	0.0085
SD054	0.1	11/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD055	0.1	11/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD056	0.1	11/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD057	0.1	11/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD058	0.1	11/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD059	0.1	11/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD060	0.1	11/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD061	0.1	12/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0014	0.0014
SD061	0.1	12/04/2017	Normal	EB1708845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0015	-
SD062	0.1	13/04/2017	Normal	EB1708845	<0.0002	<0.0002	0.0008	<0.0002	0.0325	0.0023	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.001	0.0004	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.03	0.037
SD062	0.1	13/04/2017	Normal	EB1708845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0333	-
SD063	0.1	13/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD064	0.1	13/04/2017	Normal	EB1708845	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002
SD065	0.1	13/04/2017	Normal	EB1708845	<0.0002	<0.0002	0.0007	<0.0002	0.034	0.0009	<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	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.03	0.0356
SD065	0.1	13/04/2017	Normal	EB1708845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0347	-
SD066		26/07/2017	Normal	EB1715565	<0.0002	<0.0002	0.0002	<0.0002	0.007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0072	0.0076
SD066		26/07/2017	Field_D	EB1715565	<0.0002	<0.0002	0.0002	<0.0002	0.0067	<0.0002	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	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0069	0.0081
SD067		26/07/2017	Normal	EB1715565	<0.0002	<0.0002	0.0002	<0.0002	0.0057	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0059	0.0062
SD068		26/07/2017	Normal	EB1715565	<0.0002	<0.0002	0.0003	<0.0002	0.0068	<0.0002	<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	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0071	0.0071
SD069	1 - 1	2/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0014	0.0002	0.0656	<0.0002	<0.001	0.0028	0.0004	0.0011	0.0045	<0.0002	<0.0002	0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.067	0.0762
SD069	1 - 1	2/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0027	0.0009	0.0419	<0.0002	<0.001	0.0012	0.0003	0.0004	0.0013	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0446	0.0487
SD070	0.1	8/05/2017	Normal	EB1709218	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0007	0.0007
SD070	0.1	8/05/2017	Normal	EB1709218	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0008	-
SD071	0.2 - 0.2	3/02/2017	Normal	EB1702117	0.0026	0.0016	0.0176	0.0009	0.104	0.0017	<0.001	0.0132	0.0026	0.0016	0.0022	0.0003	<0.0002	0.0006	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.122	0.149
SD071	1	3/02/2017	Normal	ES1709078	0.02	0.02	0.25	0.03	0.66	<0.0002	0.01	0.07	0.01	0.0092	0.04	<0.0002	<0.0002	0.0007	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.91	1.16
SD071	2 - 2	3/02/2017	Normal	EB1702117	0.0497	0.0547	0.558	0.0635	1.38	<0.0002	<0.001	0.13	0.0218	0.0332	0.0698	<0.0002	<0.0002	0.0009	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0004	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	1.94	2.36
SD072	0.2 - 0.2	3/02/2017	Normal	EB1702117	0.0009	0.0013	0.0322	0.003	0.116	0.0095	<0.001	0.0071	0.0014	0.0023	0.0048	0.0007	0.0006	0.0013	<0.0005	0.0004	0.0004	<0.0005	<0.0005	0.0005	<0.0005	0.0053	<0.0005	0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.148	0.188

	PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	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
Limit of Reporting	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	0.0005	0.0005	0.0002	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.0002

Location Code	Depth	Date	Sample Type	Lab Report																												
SD001	0.1	29/10/2014	Field_D	EB1445388	-	-	-	-	0.0024	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0024	-
SD001	0.1	29/10/2014	Interlab_D	437530	-	-	-	-	<0.005	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	<0.005	<0.005	-	-	-	-	-	-	-	<0.005	-
SD072	0.2 - 0.2	3/02/2017	Normal	EB1702117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD072	0.2 - 0.2	3/02/2017	Field_D	EB1702117	0.0011	0.0012	0.0123	0.0025	0.128	0.0028	<0.001	0.0035	0.0011	0.0008	0.0023	0.0007	<0.0002	0.0009	<0.0005	<0.0002	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	0.0013	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.14	0.159
SD072	0.2 - 0.2	3/02/2017	Interlab_D	AECO06_170207	<0.002	-	0.0026	-	0.019	0.0028	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.005	<0.005	-	<0.002	-	-	-	-	-	-	0.02	-
SD072	0.2 - 0.2	3/02/2017	Interlab_D	AECO06_170207	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0216	-
SD072	1.5 - 1.5	3/02/2017	Normal	EB1702117	<0.0002	0.0003	0.0073	0.0002	0.0462	0.0005	<0.001	0.0015	<0.0002	0.0005	0.0009	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0535	0.0574
SD073	0.2 - 0.2	3/02/2017	Normal	EB1702117	0.0006	0.0009	0.0212	0.0014	0.072	0.0127	<0.001	0.0055	0.0017	0.0017	0.0022	0.0005	0.0004	0.0005	<0.0005	<0.0002	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	0.0034	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0932	0.125
SD073	2 - 2	3/02/2017	Normal	EB1702117	0.0004	0.0006	0.019	0.0009	0.236	<0.0002	<0.001	0.0046	0.0009	0.0008	0.0012	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.255	0.265
SD074	0.1	8/04/2015	Normal	ES1508218	-	-	-	-	0.0057	-	-	-	-	-	0.0005	-	-	-	-	-	-	-	<0.005	0.002	-	-	-	-	-	-	-	0.0057	-
SD074	0.4	8/04/2015	Normal	ES1508218	-	-	-	-	0.0054	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0054	-
SD075	0.1	8/04/2015	Normal	ES1508218	-	-	-	-	0.0012	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0012	-
SD075	0.5	8/04/2015	Normal	ES1508218	-	-	-	-	0.0011	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0011	-
SD075	0.1	2/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0003	<0.0002	0.0053	0.001	<0.001	0.0003	<0.0002	0.0003	0.0002	0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0056	0.0076
SD076	0.1	10/08/2015	Normal	EB1525621	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	<0.0005	-
SD077	0.1	10/08/2015	Normal	EB1525621	-	-	-	-	<0.0005	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	<0.0005	-
SD078	0.1	10/08/2015	Normal	EB1525621	0.0071	-	0.0548	-	0.169	<0.0002	-	0.0097	-	0.0039	0.0067	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.005	<0.001	-	<0.0002	<0.001	-	<0.001	<0.001	-	<0.001	0.2238	-
SD079	0.1	10/08/2015	Normal	EB1525621	-	-	-	-	0.0255	-	-	-	-	-	0.0027	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0255	-
SD080	0.4 - 0.5	9/02/2011	Normal		-	-	-	-	0.12	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-
SD081	0.4 - 0.5	9/02/2011	Normal		-	-	-	-	<0.0005	-	-	-	-	-	0.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD082	0.4 - 0.5	9/02/2011	Normal		-	-	-	-	<0.0005	-	-	-	-	-	0.023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD083	0.4 - 0.5	9/02/2011	Normal		-	-	-	-	<0.0005	-	-	-	-	-	0.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD084	0.5 - 0.6	7/12/2010	Normal		-	-	-	-	0.0096	-	-	-	-	-	0.0044	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD085	0.5 - 0.6	6/12/2010	Normal		-	-	-	-	0.012	-	-	-	-	-	0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD086	0.2 - 0.2	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0016	0.0003	0.0124	0.0008	<0.001	0.0005	0.0004	0.0006	0.0008	0.0013	0.0027	0.0009	<0.0005	0.0007	0.0023	<0.0005	<0.0005	0.002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.01	0.0273
SD086	0.2 - 0.2	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.014	-
SD086	1	27/01/2017	Normal	ES1709078	0.0003	0.0002	0.0013	0.0002	0.24	0.0046	0.006	0.01	0.0048	0.007	0.0068	0.0029	<0.0002	0.0021	<0.0005	<0.0002	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.24	0.29
SD086	1	27/01/2017	Normal	ES1709078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2413	-
SD086	1 - 1	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0006	<0.0002	0.15	0.0059	<0.001	0.0019	0.0008	0.0011	0.0013	0.001	0.0002	0.0006	<0.0005	<0.0002	0.0004	<0.0005	<0.0005	0.0045	<0.0005	0.0013	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.15	0.17
SD086	1 - 1	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1506	-
SD087	0.1	21/06/2012	Normal		-	-	-	-	0.121	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-
SD088	0.2	27/01/2017	Normal	ES1709078	0.0016	0.002	0.03	0.0022	0.12	0.01	0.02	0.06	0.02	0.02	0.03	0.0054	0.0004	0.01	<0.0005	<0.0002	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.15	0.37
SD088	0.2 - 0.2	27/01/2017	Normal	EB1701752	0.0011	0.0014	0.0241	0.0016	0.0831	0.0221	<0.001	0.0028	0.0017	0.0008	0.0026	0.0006	0.0029	0.0006	<0.0005	0.0005	0.0016	<0.0005	<0.0005	0.0016	0.0005	0.0091	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.1	0.159
SD088	0.2 - 0.2	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1072	-
SD088	1 - 1	27/01/2017	Normal	EB1701752	0.0004	0.0007	0.0223	0.0011	0.0938	0.0221	<0.001	0.0023	0.0023	0.0013	0.0037	0.0005	0.0012	0.0006	<0.0005	<0.0002	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0087	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.11	0.162
SD088	1 - 1	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1161	-
SD089	0.1	25/06/2012	Normal		-	-	-	-	0.041	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-
SD090	0.2 - 0.2	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0022	0.0003	0.0785	0.0009	<0.001	0.001	0.0003	0.0002	0.0012	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.08	0.0846
SD090	0.2 - 0.2	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0807	-
SD090	1 - 1	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0007	0.0002	0.0359	<0.0002	<0.001	0.0006	<0.0002	0.0002	0.0016	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.03	0.0392
SD090	1 - 1	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0366	-
SD091	0.1	22/06/2012	Normal		-	-	-	-	0.247	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-
SD092	0.2 - 0.2	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0004	<0.0002	0.0078	0.0003	<0.001	0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0082	0.009
SD092	0.2 - 0.2	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD092	1 - 1	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0004	<0.0002	0.0108	0.0002	<0.001	0.0003	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.01	0.01
SD092	1 - 1	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0112	-
SD093	0.1	21/06/2012	Normal		-	-	-	-	0.0176	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-
SD094	0.2	27/01/2017	Normal	ES1709078	0.01	0.0095	0.1	0.007	0.21	0.004	0.005	0.02	0.0054	0.0038	0.01	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.31	0.39
SD094	0.2 - 0.2	27/01/2017	Normal	EB1701752	0.0194	0.0195	0.0859	0.0012	0.0352	<0.0002	<0.001	0.0193	0.0018	0.002	0.0032	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.12	0.188
SD094	0.2 - 0.2	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1211	-
SD094	1.5 - 1.5	27/01/2017	Normal	EB1701752	0.0005	<0.0002	0.0004	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0008	0.0013
SD095	0.1	21/06/2012	Normal		-	-	-	-	0.196	-	-	-	-	-	0.0012	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-
SD096	0.2 - 0.2	27/01/2017	Normal	EB1701752	0.0021	0.0009	0.0117	0.0007	0.154	0.0021	<0.001	0.0063	0.0036	0.0005	0.0051	0.0003	<0.0002	0.0003	<0.0005	<0.0002	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.16	0.188
SD096	0.2 - 0.2	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1657	-
SD096	1.5 - 1.5	27/01/2017	Normal	EB1701752	0.0216	0.0248	0.382	0.0114	0.17	<0.0002	<0.001	0.0522	0.006	0.0049	0.019	<0.0002	<0.0002	0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.55	0.692
SD096	1.5 - 1.5	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.552	-
SD097	0.1	21/06/2012	Normal		-	-	-	-	0.0668	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-
SD098	0.2 - 0.2	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0014	<0.0002	0.0185	0.001	<0.001	0.0006	0.0006	0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.01	0.0228
SD098	0.2 - 0.2	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0199	-
SD098	1.5 - 1.5	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0021	<0.0002	0.0141	0.0002	<0.001	0.0005	0.0004	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.01	0.0177
SD098	1.5 - 1.5	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0162	-
SD099	0.1	21/06/2012	Normal		-	-	-	-	0.37	-	-	-	-	-	0.0018	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-
SD100	0.1	29/03/2016	Normal	EB1608609	<0.0002	-	0.0003	-	0.0225	<0.0002	-	<0.0002	-	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.005	<0.001	-	<0.0002	<0.001	-	<0.001	<0.001	-	<0.001	0.0228	-
SD101	0.2	27/01/2017	Normal	ES1709078	<0.0002	<0.0002	0.002	0.0003	0.07	0.0044	0.001	0.0015	0.0008	0.0005	0.0016	<0.0002	<0.0002	0.0004	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.07	0.08
SD101	0.2	27/01/2017	Normal	ES1709078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.072	-
SD101	0.2 - 0.2	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.001	0.0002	0.0414	0.0024	<0.001	0.0004	0.0004	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.04	0.0464
SD101	0.2 - 0.2	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0424	-
SD101	0.5 - 0.5	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0009	<0.0002	0.0302	0.0018	<0.001	0.0004	0.0003	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.03	0.0341
SD101	0.5 - 0.5	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0311	-
SD102	0.1	30/03/2016	Field_D	EB1608609	<0.0002	-	<0.0002	-	<0.0005	<0.0002	-	<0.0002	-	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.005	<0.001	-	<0.0002	<0.001	-	<0.001	<0.001	-	<0.001	<0.0005	-
SD102	0.1	30/03/2016	Interlab_D	495205	<0.005	-	<0.005	-	0.021	<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	<0.005	-	<0.01	<0.01	-	-	<0.01	-	-	0.0235	-
SD102	0.1	30/03/2016	Normal	EB1608609	<0.0002	-	<0.0002	-	0.0022	<0.0002	-	<0.0002	-	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.005	<0.001	-	<0.0002	<0.001	-	<0.001	<0.001	-	<0.001	0.0022	-
SD102	0.1	30/03/2016	Normal	EB1608609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0023	-
SD103	0.1	31/03/2016	Normal	EB1608609	<0.0002	-	<0.0002	-	<0.0005	<0.0002	-	<0.0002	-	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	-	<0.005	<0.001	-	<0.0002	<0.001	-	<0.001	<0.001	-	<0.001	<0.0005	-
SD104	0.1	13/04/2016	Normal	EB1609928	<0.0002	<0.0005	<0.0002	<0.001	<0.0005	<0.0002	<0.001	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.005	<0.001	<0.0002	<0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0005	-
SD104	0.1	1/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0008	<0.0002	0.0068	<0.0002	<0.001	0.0004	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0076	0.0083
SD108	0.1	21/06/2012	Normal		-	-	-	-	0.258	-	-	-	-	-	0.0063	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-
SD109	0.2 - 0.2	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0016	<0.0002	0.0254	0.0024	<0.001	0.0004	0.0006	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0003	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.02	0.0312
SD109	0.2 - 0.2	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.027	-
SD109	0.5 - 0.5	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0032	0.0003	0.0664	0.0022	<0.001	0.0007	0.0003	0.0003	0.0012	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.06	0.0746
SD109	0.5 - 0.5	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0696	-

					PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS	
					Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecane sulfonic 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)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	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
Limit of Reporting					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	0.0005	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.0002
Location Code	**Depth**	**Date**	**Sample Type**	**Lab Report**																														
SD001	0.1	29/10/2014	Field_D	EB1445388	-	-	-	-	0.0024	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	<0.001	-	-	-	-	-	-	-	0.0024	-
SD001	0.1	29/10/2014	Interlab_D	437530	-	-	-	-	<0.005	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	<0.005	<0.005	-	-	-	-	-	-	-	<0.005	-
SD110	0.1	21/06/2012	Normal		-	-	-	-	0.0634	-	-	-	-	-	0.0006	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-
SD111	0.2 - 0.2	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0021	0.0002	0.0332	0.0011	<0.001	0.002	0.0027	0.0022	0.0026	0.001	0.0008	0.0015	<0.0005	0.0002	0.0014	<0.0005	<0.0005	0.0044	0.0006	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.03	0.056
SD111	0.2 - 0.2	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0353	-
SD111	0.4 - 0.4	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0011	<0.0002	0.0313	0.0007	<0.001	0.0008	0.0013	0.0007	0.001	0.0003	<0.0002	0.0008	<0.0005	<0.0002	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.03	0.0382
SD111	0.4 - 0.4	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0324	-
SD112	0.1	21/06/2012	Normal		-	-	-	-	0.0695	-	-	-	-	-	0.0077	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-
SD113	0.2 - 0.2	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.001	<0.0002	0.0264	0.0013	<0.001	0.0014	0.0015	0.0022	0.0022	0.0009	0.0002	0.0026	<0.0005	<0.0002	0.0006	<0.0005	0.0014	0.0033	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.02	0.045
SD113	0.2 - 0.2	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0274	-
SD113	0.4 - 0.4	27/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0004	<0.0002	0.0112	0.0004	<0.001	0.0006	0.0008	0.0008	0.0007	0.0003	<0.0002	0.001	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.01	0.0162
SD113	0.4 - 0.4	27/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0116	-
SD114	0.05	15/01/2013	Normal		-	-	-	-	0.0732	-	-	-	-	-	0.0012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD114	0.3	15/01/2013	Normal		-	-	-	-	0.0516	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD115	0.2 - 0.2	28/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0008	<0.0002	0.006	0.0004	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0068	0.0075
SD115	0.2 - 0.2	28/01/2017	Interlab_D	AECO06_170201	<0.002	-	<0.002	-	0.0055	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.005	<0.005	-	<0.002	-	-	-	-	-	-	0.0055	-
SD115	0.2 - 0.2	28/01/2017	Interlab_D	AECO06_170201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0065	-
SD115	1 - 1	28/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0003	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0022	0.0022
SD115	1 - 1	28/01/2017	Field_D	EB1701752	<0.0002	<0.0002	0.0004	<0.0002	0.0021	0.0002	<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	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0025	0.0027
SD116	0.05	15/01/2013	Normal		-	-	-	-	0.0032	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD116	0.3	15/01/2013	Normal		-	-	-	-	0.0118	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD117	0.2	28/01/2017	Normal	ES1709078	0.0026	0.005	0.03	0.0066	0.36	0.0076	0.008	0.01	0.0044	0.0032	0.007	0.0017	0.0007	0.0013	<0.0005	0.0004	0.0006	<0.0005	0.0011	0.0021	<0.0005	0.0024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.39	0.46
SD117	0.2 - 0.2	28/01/2017	Normal	EB1701752	0.001	0.0011	0.0161	0.0024	0.15	0.0016	<0.001	0.002	0.0007	0.0007	0.0015	0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.16	0.179
SD117	0.2 - 0.2	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1661	-
SD117	0.2 - 0.2	28/01/2017	Field_D	EB1701752	0.0003	0.0003	0.0034	0.0005	0.0356	0.0009	0.207	0.0004	0.0013	<0.0002	0.0008	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.03	0.251
SD117	0.2 - 0.2	28/01/2017	Field_D	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.039	-
SD117	1 - 1	28/01/2017	Interlab_D	AECO06_170201	0.0023	-	0.024	-	0.63	0.0091	<0.005	0.0031	<0.002	<0.002	0.15	<0.002	0.0035	<0.002	<0.002	<0.002	<0.002	-	<0.005	<0.005	-	0.02	-	-	-	-	-	-	0.65	-
SD117	1 - 1	28/01/2017	Interlab_D	AECO06_170201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.654	-
SD117	1.5 - 1.5	28/01/2017	Normal	EB1701752	0.0004	0.0004	0.0023	0.0003	0.0201	0.0006	<0.001	0.0014	0.0004	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0003	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.02	0.0265
SD117	1.5 - 1.5	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0224	-
SD118	0.05	15/01/2013	Normal		-	-	-	-	0.0013	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD118	0.3	15/01/2013	Normal		-	-	-	-	0.003	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD119	0.05	15/01/2013	Normal		-	-	-	-	0.0067	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD119	0.3	15/01/2013	Normal		-	-	-	-	0.0092	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD120	0.2 - 0.2	28/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0003	<0.0002	0.0102	<0.0002	<0.001	0.0003	<0.0002	0.0003	0.0017	<0.0002	<0.0002	0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.01	0.013
SD120	0.2 - 0.2	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0105	-
SD120	1 - 1	28/01/2017	Normal	EB1701752	<0.0002	<0.0002	0.0014	0.0003	0.03	<0.0002	<0.001	0.0007	0.0002	0.0005	0.0019	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.03	0.035
SD120	1 - 1	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0314	-
SD121	0.2 - 0.2	28/01/2017	Normal	EB1701752	0.0003	0.0002	0.0038	0.0005	0.0202	0.0008	<0.001	0.0002	0.0002	<0.0002	0.0003	0.0012	0.0003	0.0004	<0.0005	<0.0002	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.02	0.0292
SD121	0.2 - 0.2	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.024	-
SD121	1.5 - 1.5	28/01/2017	Normal	EB1701752	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0019	0.0023
SD121	1.5 - 1.5	28/01/2017	Normal	EB1701752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	-
SD122	0.2 - 0.2	2/02/2017	Normal	EB1702117	<0.0002	0.0002	0.0017	<0.0002	0.021	0.0009	<0.001	0.0005	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0227	0.0249
SD122	1 - 1	2/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0011	<0.0002	0.0876	<0.0002	<0.001	0.0003	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0887	0.0893
SD123	0.2 - 0.2	2/02/2017	Normal	EB1705587	<0.0002	<0.0002	0.0009	<0.0002	0.014	<0.0002	<0.001	0.0006	0.0005	0.001	0.0018	0.0007	<0.0002	0.0016	<0.0005	<0.0002	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.01	0.0213
SD123	0.2 - 0.2	2/02/2017	Normal	EB1705587	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0149	-
SD123	1 - 1	2/02/2017	Normal	EB1705587	0.0005	0.0008	0.0199	0.0007	0.0027	<0.0002	<0.001	0.0017	0.0004	0.0012	0.0031	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.02	0.031
SD123	1 - 1	2/02/2017	Normal	EB1705587	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0226	-
SD124	0.2 - 0.2	2/02/2017	Normal	EB1705587	<0.0002	<0.0002	0.0014	0.0011	0.012	0.0004	<0.001	0.0016	<0.0002	0.0014	0.0023	0.0019	0.0003	0.002	<0.0005	<0.0002	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.01	0.0252
SD124	0.2 - 0.2	2/02/2017	Normal	EB1705587	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0134	-
SD124	2 - 2	2/02/2017	Normal	EB1705587	0.0004	0.0004	0.0073	<0.0002	0.0014	<0.0002	<0.001	0.0016	0.0004	0.0005	0.0006	<0.0002	<0.0002	0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0087	0.0128
SD125	0.2 - 0.2	2/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0033	0.0003	0.108	0.0062	<0.001	0.0049	0.0037	0.003	0.0043	0.0088	0.0012	0.0077	<0.0005	0.0003	0.0018	<0.0005	<0.0005	0.0011	<0.0005	0.0011	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.111	0.156
SD125	2 - 2	2/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0036	0.0002	0.155	<0.0002	<0.001	0.0012	0.0011	0.0009	0.002	<0.0002	<0.0002	0.0008	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.159	0.165
SD126	0.2 - 0.2	2/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0009	<0.0002	0.01	0.0009	<0.001	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0004	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0109	0.0126
SD126	1 - 1	2/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0006	<0.0002	0.0192	0.001	<0.001	0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0198	0.0222
SD127	0.2 - 0.2	2/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0012	<0.0002	0.0051	0.0031	<0.001	0.0009	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0063	0.0108
SD127	1.5 - 1.5	2/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0004	<0.0002	0.0129	0.0003	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0133	0.0144
SD128	0.2 - 0.2	2/02/2017	Normal	EB1702117	0.0012	0.0018	0.0276	0.0012	0.056	0.0029	<0.001	0.0128	0.0013	0.0024	0.0039	<0.0002	<0.0002	0.0004	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0018	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0836	0.113
SD128	2 - 2	2/02/2017	Normal	EB1702117	<0.0002	<0.0002	0.0014	<0.0002	0.0079	<0.0002	<0.001	0.0011	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0093	0.0104
SD128	2 - 2	2/02/2017	Normal	EB1702117	<0.0002	0.0002	0.0055	0.0002	0.0657	<0.0002	<0.001	0.003	0.0003	0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0712	0.0755

Appendix C

Charts

Appendix C Charts

Chart C1 **Groundwater sum of PFHxS and PFOS concentrations in selected on-Base monitoring wells: 2015 to 2021**

Chart C2 **Groundwater sum of PFHxS and PFOS concentrations in monitoring wells in the area of the former fire station: 2014 to 2021**

Chart C3 **Groundwater sum of PFHxS and PFOS concentrations in residential bores within 1 km of southern Base boundary: 2014 to 2021**

Chart C4 **Groundwater sum of PFHxS and PFOS concentrations in selected off-Base wells within approximately 1 km of the south-western corner of AACO: 2013 to 2021**

Chart C5 **Groundwater sum of PFHxS and PFOS concentrations in selected off-Base wells between 1 km and 2 km of the south-western corner of AACO: 2014 to 2021**

Chart C6 **Groundwater sum of PFHxS and PFOS concentrations in monitoring wells at Brymaroo: 2015 to 2021**

Chart C7 **Piper plot showing major ions from groundwater collected from the AACO Management Area during the sampling events in October 2020**

Chart C8 **PFOS concentrations in surface water in drainage channels: 2014 to 2021**

Chart C9 **PFOS concentrations in surface water in creeks: 2014 to 2021**

Chart C1 Groundwater sum of PFHxS and PFOS concentrations in selected on-Base monitoring wells: 2015 to 2021

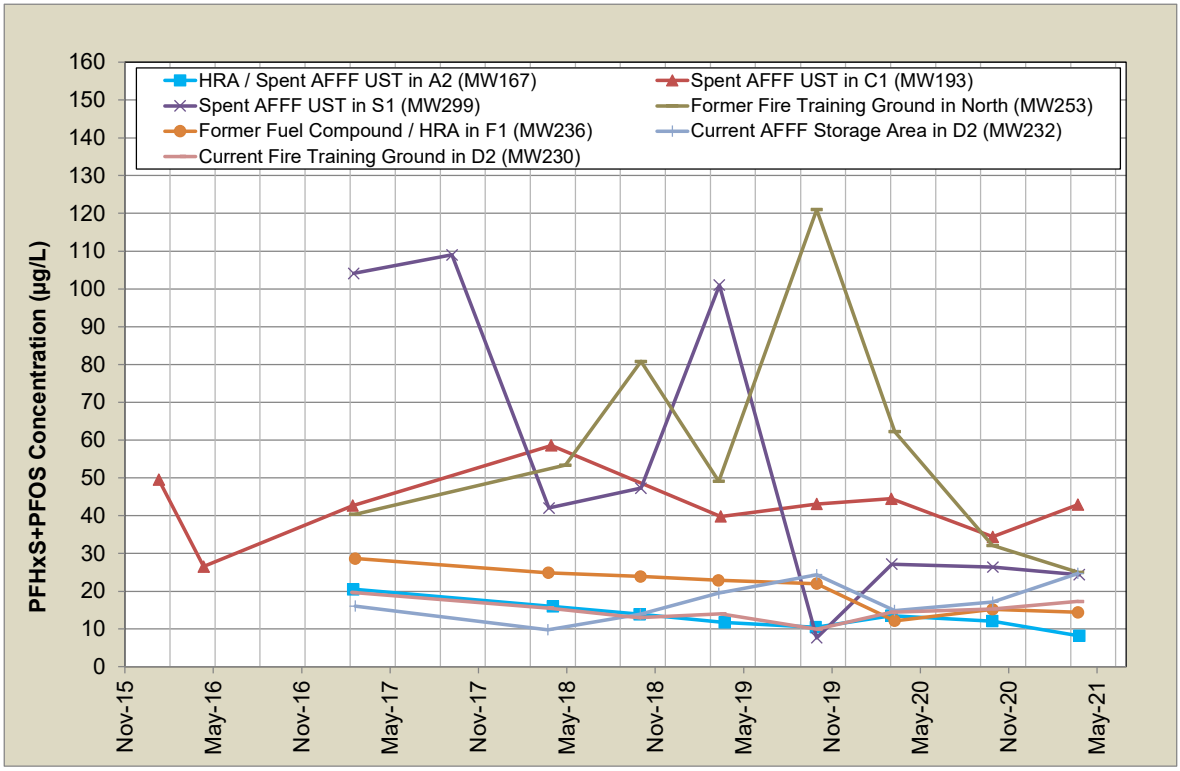


Chart C2 Groundwater sum of PFHxS and PFOS concentrations in monitoring wells in the area of the former fire station: 2014 to 2021

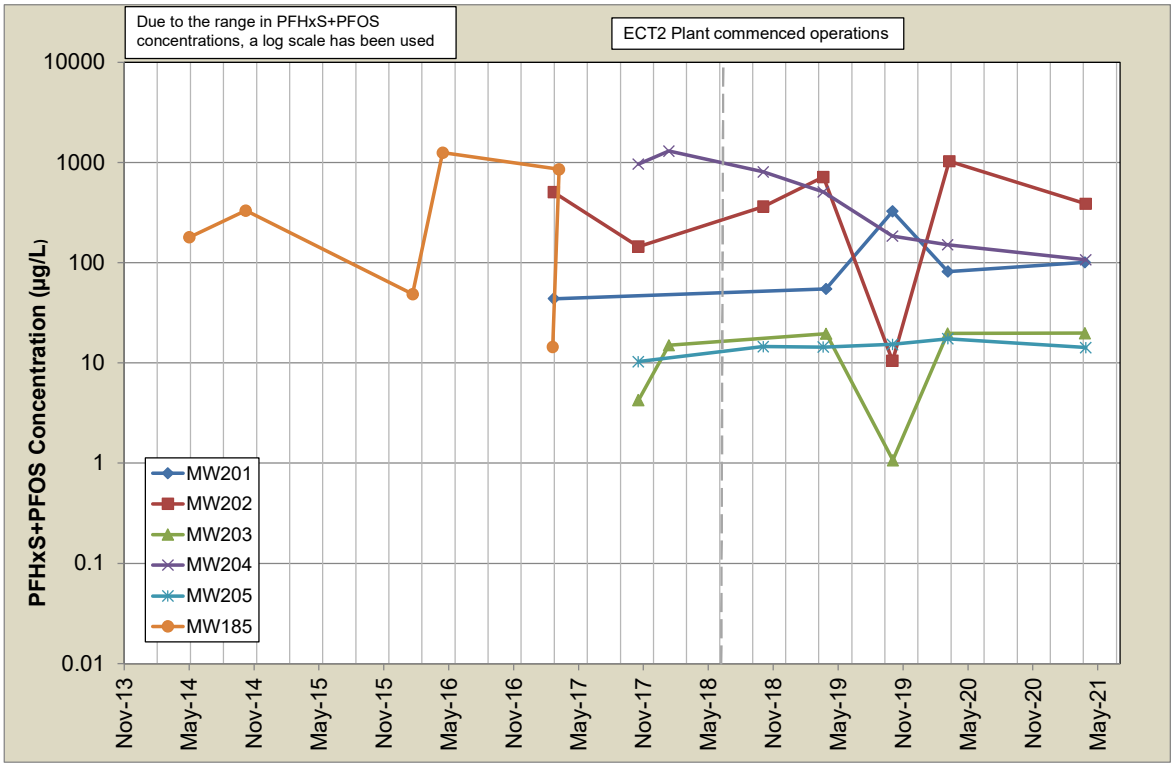


Chart C3 Groundwater sum of PFHxS and PFOS concentrations in residential bores within 1 km of southern Base boundary: 2014 to 2021

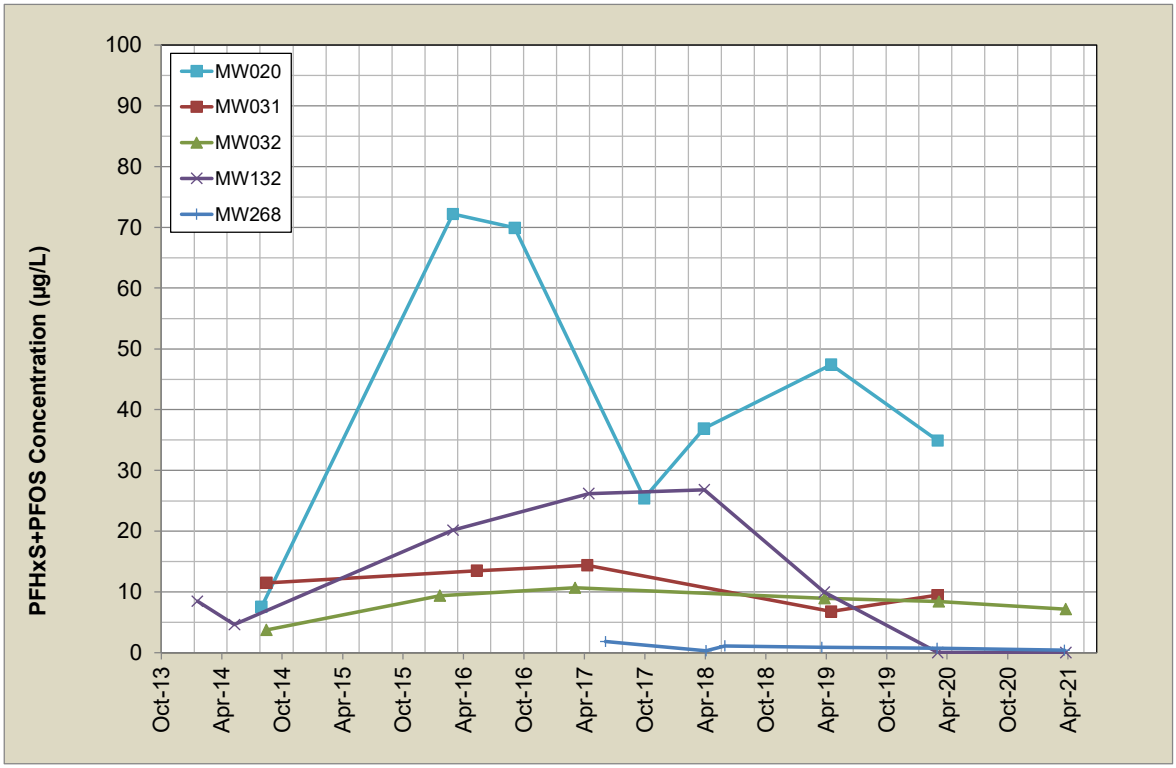


Chart C4 Groundwater sum of PFHxS and PFOS concentrations in selected off-Base wells within approximately 1 km of the south-western corner of AACO: 2014 to 2021

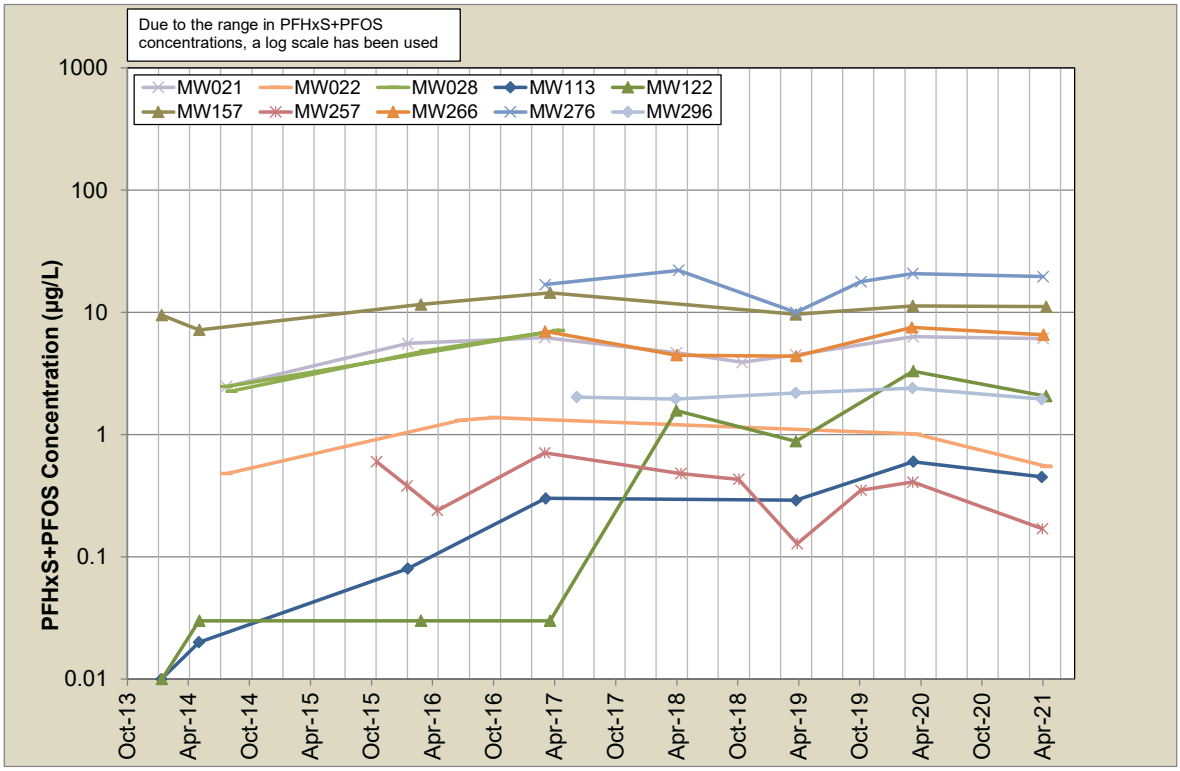


Chart C5 Groundwater sum of PFHxS and PFOS concentrations in selected off-Base wells between 1 km and 2 km of the south-western corner of AACO: 2014 to 2021

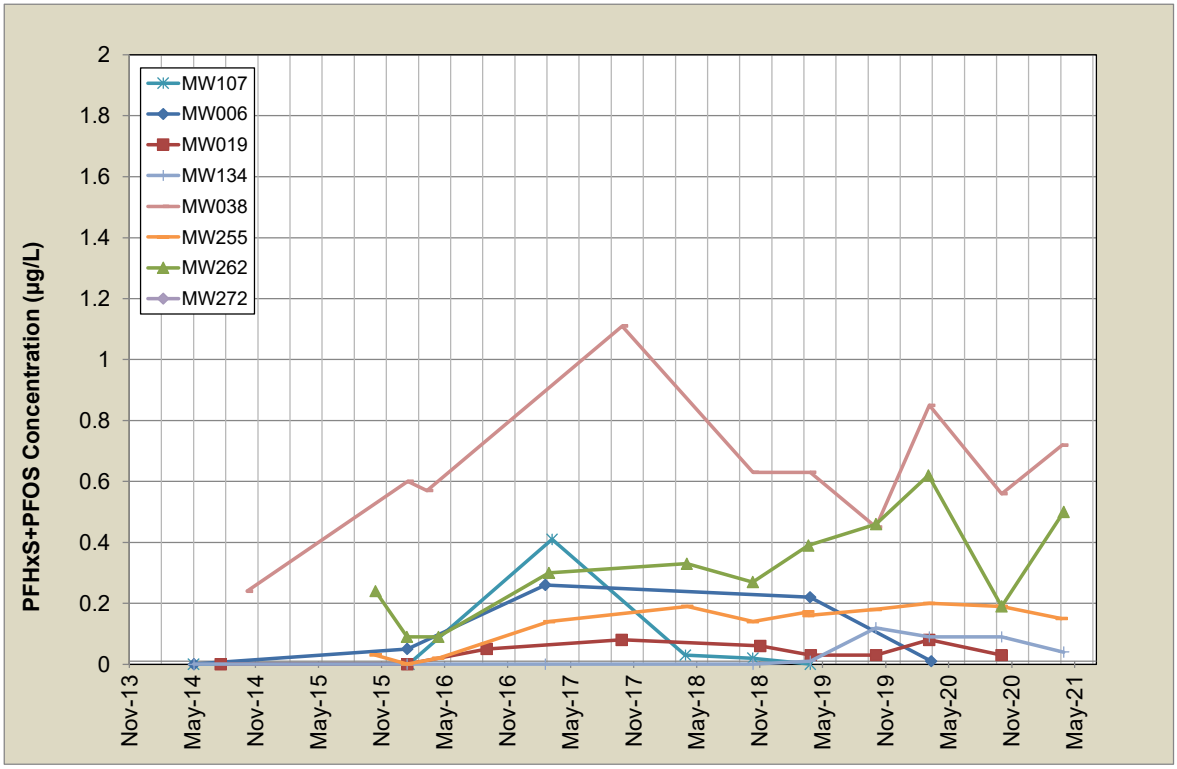


Chart C6 Groundwater PFHxS+PFOS concentrations in monitoring wells at Brymaroo: 2015 to 2021

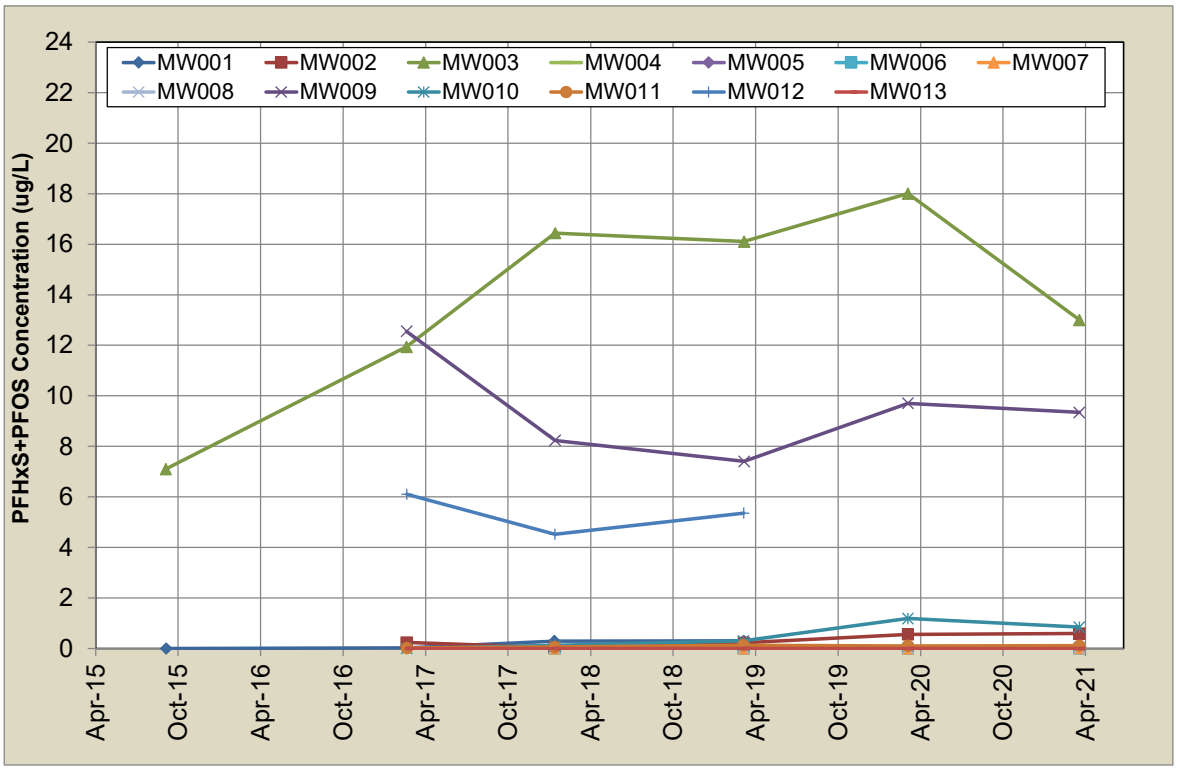


Chart C7 Piper plot showing major ions from groundwater collected from the AACO Management Area during the sampling events in October 2020

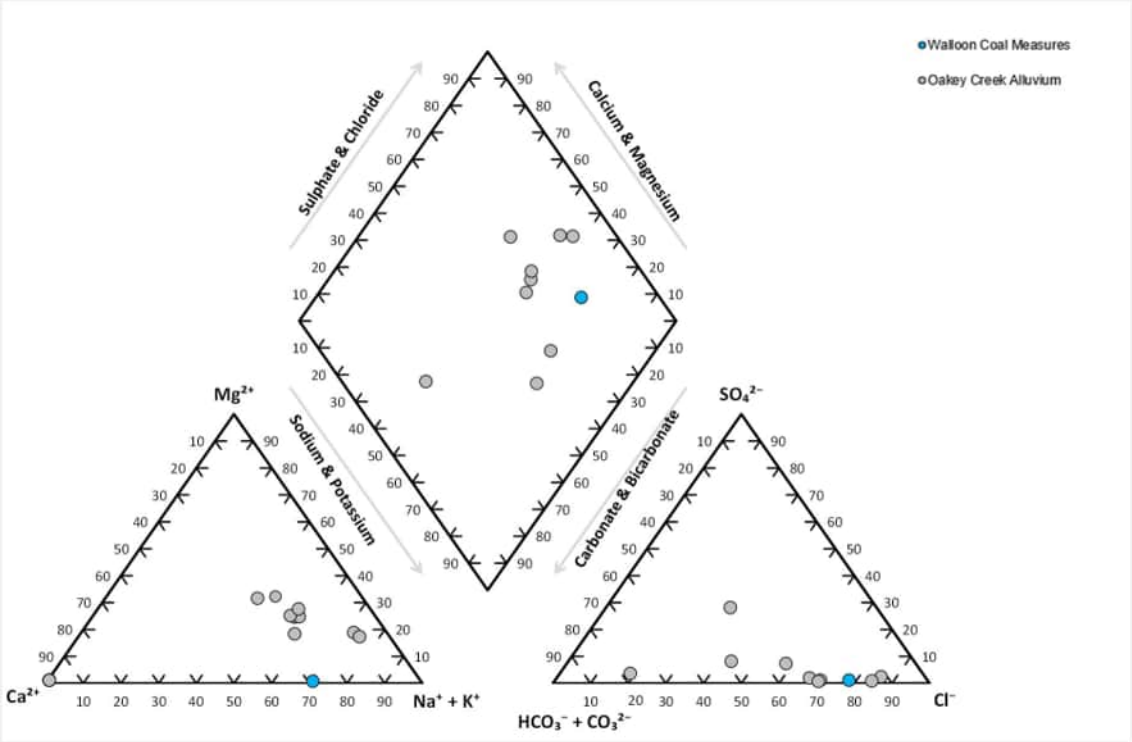


Chart C8 PFOS concentrations in surface water in drainage channels: 2014 to 2021

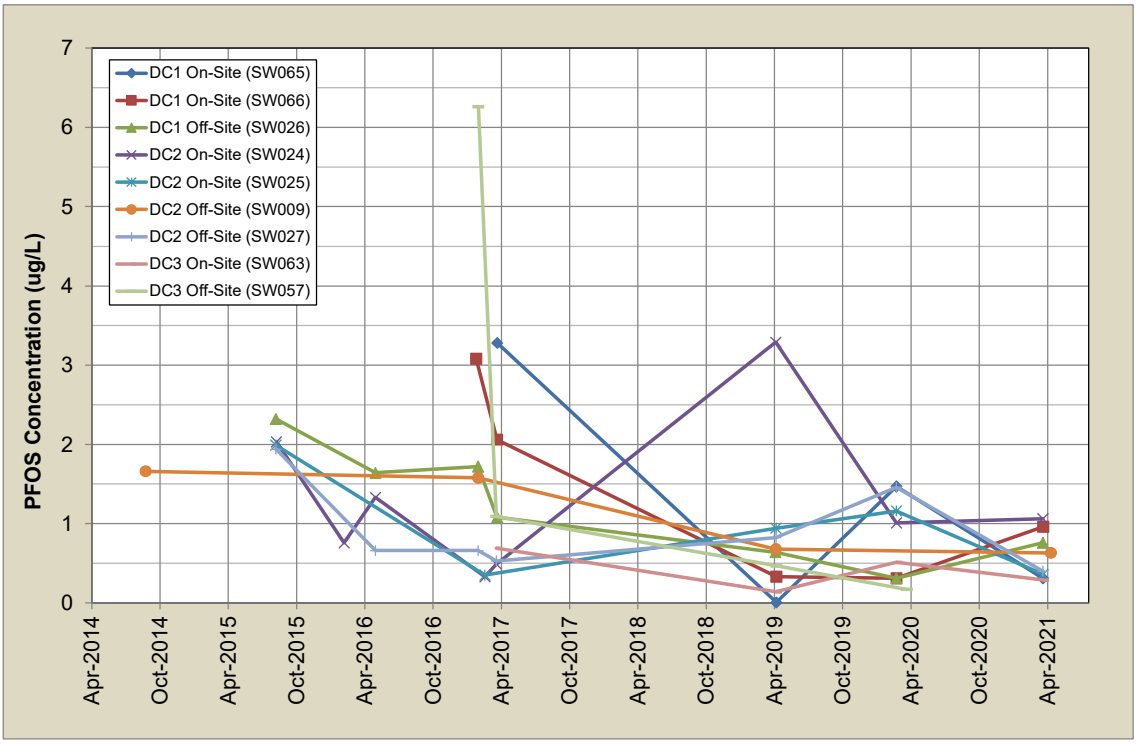
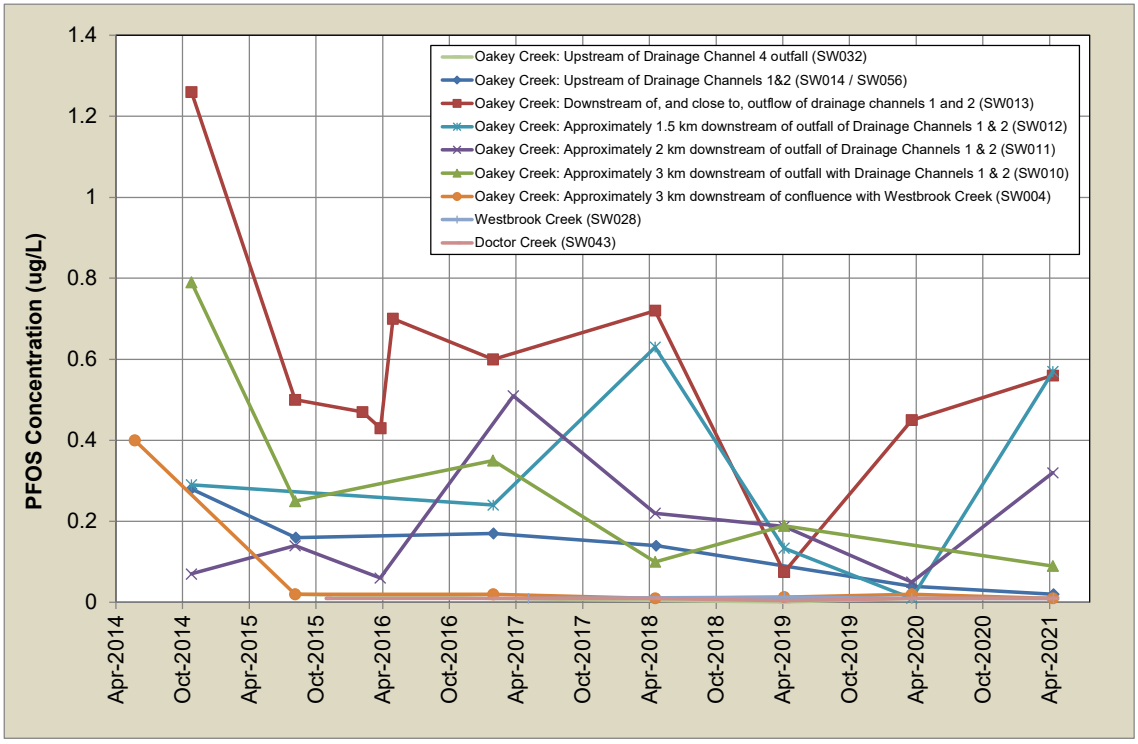


Chart C9 PFOS concentrations in surface water in creeks: 2014 to 2021



Appendix D

Sampling Event Factual Reports

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Department of Defence
22-Apr-2021

Sampling Event Factual Report, October 2020

PFAS OMP - Army Aviation Centre Oakey

Sampling Event Factual Report, October 2020

PFAS OMP - Army Aviation Centre Oakey

Client: Department of Defence

ABN: 68706814312

Prepared by

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Prepared by	Camden McCosker
Reviewed by	James Peachey

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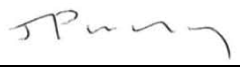
			Name/Position	Signature
A	18-Nov-2020	Final	James Peachey Associate Director	
B	11-Feb-2021	Draft	James Peachey Associate Director	
0	22-Apr-2021	Final	James Peachey Associate Director	

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1.0 Introduction

1.1 General

AECOM Australia Pty Ltd (AECOM) has been engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Program (OMP) (Defence, 2019) at the Army Aviation Centre Oakey (AACO) (the 'Site') and the AACO Management Area in the South Queensland Region. The locations of the Site and Management Area are shown in **Figure 1** and **Figure 2** respectively in **Appendix A**. The OMP for AACO (Defence 2019) includes the following sampling events:

- Targeted groundwater sampling events in October 2019, October 2020 and October 2021
- Annual comprehensive sampling events in March/April 2020, April 2021 and April 2022 including groundwater, sediment and surface water sampling.

Following each comprehensive and targeted sampling event, sampling event factual reports will be prepared. Annual interpretative reports will be prepared following the completion of each 12-month sampling period. This sampling event factual report has been prepared to report the results of the targeted sampling event completed in October 2020, including highlighting any first-time detections and/or first-time exceedances of human health screening criteria for PFHxS+PFOS and / or PFOA.

This report has been prepared in accordance with the *Defence (2020) PFAS OMP factual reports – guidance for preparation*, March 2020 (Defence, 2020).

1.2 Objectives

The objectives of the OMP program are to:

- Implement the OMP prepared as part of the PFAS Management Area Plan (PMAP); and
- Collect data that will enable Defence to maintain an up to date understanding of the distribution, concentration and transport of PFAS at each property.

The data will assist in the timely identification of risks and inform Defence's approach to the management of PFAS, including updates and revisions to the PMAP.

The objective of this phase of works is to implement the scope of works for the targeted October 2020 sampling event in accordance with the sampling and analysis quality plan (SAQP) (AECOM, 2020).

2.0 Scope of Work

The sampling event at AACO was completed in general accordance with the SAQP (AECOM, 2020). In summary, the scope of works for this sampling event included:

- Review and revision of the SAQP in September 2020.
- Obtaining access to private properties where some groundwater sampling locations are situated.
- Gauging of groundwater level in monitoring wells prior to collection of samples (refer to **Table 1** below, and **Figure 3** and **Figure 4** in **Appendix A** for specific locations).
- Collection of groundwater samples at 49 locations including 41 monitoring wells (34 at AACO and seven located off-Site) and eight off-Site residential bores (refer to **Table 1** below, **Figure 3** and **Figure 4** in **Appendix A**). It is noted that a groundwater sample was unable to be collected from off-Site residential bore MW084 as the stakeholder declined to participate in sampling with this sample replaced by MW056.
- Collection of groundwater samples from three off-Site monitoring wells MW291, MW295 and MW297 that monitor the Walloon Coal Measures. These were collected to provide information on 6:2 fluorotelomer sulfonate (FTS) concentrations which were detected in these wells during the March/April 2020 sampling event.
- Collecting field duplicate samples at a rate of 1 in 10 primary samples and collecting one rinsate sample per fieldwork day.
- Analysis of all samples for the PFAS suite at the standard limit of reporting (LOR). Analysis of 20% of groundwater samples for major cations (sodium, calcium, magnesium and potassium) and anions (chlorine, sulphate, bicarbonate, carbonate), total suspended solids (TSS) and dissolved organic carbon (DOC).
- Data management of all OMP field and laboratory data in the Defence ESdat database.
- Preparation of this Sampling Event Factual Report.

Table 1 Groundwater Sampling Locations

Location		Monitoring Wells / Residential Bores (in italics) (* denotes samples analysed for non-PFAS suite)
Source Area Bores	Fire training area in the north of the site	MW253*, MW254
	Former fire station in B3	MW201, MW202*, MW203, MW204, MW205
	Aqueous film forming foam (AFFF) Storage Area / D20 appliance testing area	MW221, MW222, MW230, MW232*
	AFFF recovery tank in F1 / hot refuel area	MW235, MW236*, MW241
	AFFF recovery tank in A2 / hot refuel area	MW172*, MW173
	AFFF recovery tank in S1	MW299*, MW300
	AFFF Settling tank in C1	MW193, MW198*, MW206, MW223*, MW229
On-Site Boundary Bores (Oakey Creek Alluvium)		MW167, MW174, MW178, MW179/MW180, MW187, MW189, MW233, MW242, MW245, MW249, MW252
West and southwest of site		MW255*, MW257, MW262, MW264, MW276, MW272, *MW003, MW019, MW022, MW038, MW056*[1]*, MW134, MW147, MW151*
Underlying aquifers to south of the site		MW269*, MW291, MW295, MW297

[1] MW084 was replaced with MW056 as the stakeholder declined the sampling access request. MW056 is located approximately 160 m west-north-west of MW084.

3.0 Methodology

The methodology used for the targeted October 2020 sampling event was in accordance with the SAQP (AECOM, 2020) and is summarised below.

3.1 Groundwater Sampling Methodology

Table 2 Groundwater Sampling Methodology

Item	Details
Groundwater gauging	The depth to groundwater was measured in each monitoring well immediately prior to collection of groundwater samples using a decontaminated interface probe.
Field parameters	Temperature, electrical conductivity, dissolved oxygen, oxidation-reduction potential, pH and observations of water quality were recorded for all groundwater samples. Equipment calibration certificates 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. Once sampling was completed, new HydraSleeves™ were deployed at the screened interval depth in preparation for the next sampling round. There was insufficient groundwater in three monitoring wells (MW167, MW236 and MW300) for HydraSleeve sampling. Groundwater samples were collected by bailer. Bore water samples were collected by placing the laboratory sample bottle beneath the tap and the tap slowly opened to collect the “first flush” of water.
Sample analysis	All primary samples were submitted for PFAS suite using the standard levels of detection. Additionally, approximately 20% of selected primary samples were submitted for major ions, TSS and DOC. ALS Environmental (ALS) Brisbane, Queensland was used as the primary laboratory. The National Measurement Institute (NMI) of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses were certified by the National Association of Testing Authorities (NATA). Chain of custody (COC) forms and laboratory certificates are presented in **Appendix D** and **Appendix E** respectively.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits) and rinsate samples. Refer to **Appendix C** for assessment of QA/QC sample data.

3.2 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. Guidance documents used to assess the dataset includes the following:

- 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. September 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 3** below.

Table 3 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water - groundwater	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Ecological Receptors			
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	The values are from the PFAS NEMP (HEPA, 2020). The 99% level of protection has been applied for slightly to moderately disturbed ecosystems. This approach is generally adopted for chemicals that bioaccumulate and biomagnify in wildlife. For the purposes of preliminary screening of analytical water results, the laboratory LOR will be adopted rather than sole use of the criteria value. *All groundwater results will be compared to these criteria.*
	PFOA	19 µg/L	

3.3 Data Quality Objectives and Data Validation

The data quality objectives and data quality indicators adopted for these works are presented in the SAQP (AECOM, 2020).

The data validation assessment is provided in **Appendix C**.

The data validation procedure 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 this event has been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (DCMM) (Defence, 2018) requirements.

3.4 Deviations from the SAQP

During the sampling event, there was a single deviation from the SAQP:

- Access to MW084 was declined and was replaced by MW056 for this sampling event.

4.0 Field Observations and Results

The targeted October 2020 sampling event was completed between 19 and 23 October 2020. The results are summarised in following sections.

4.1 Groundwater Observations and Field Measurements

Table 4 Groundwater Observations and Field Measurements

Item	Observation
Access / SAQP Deviations	All monitoring wells and bores were accessible except for the following: • The groundwater sample from residential bore MW084 was not collected as the stakeholder declined sampling. Nearby residential bore MW056 was sampled in replacement of MW084.
Monitoring Well Network	Gatic/monument covers to the following monitoring wells were noted to be damaged during the fieldworks: • The stick-up monument of monitoring well MW242 (on agricultural land leased by Defence to the immediate west of the base) is broken and requires replacement. The well was able to be sampled. • The gatic of monitoring well MW187 is broken/smashed and requires replacement. The well was able to be sampled.
Weather Conditions	Rainfall was recorded on two days with 9.6 mm recorded on 19 October 2020 and 15.6 mm recorded on 22 October 2020. The other days were dry. Maximum temperatures ranged between 2.9 and 28.3 °C.
Field Observations	An organic odour was noted during gauging of off-Site wells MW257 and MW276. A hydrocarbon odour and sheen were observed in MW193. No visible or olfactory indications of contamination were observed during the sampling of the other monitoring wells. Field observations are presented **Table T1** in **Appendix B**.
Depth to LNAPL	LNAPL was not observed in any of the groundwater wells gauged during this sampling event. Groundwater gauging data are presented in **Table T1** in **Appendix B**.
Depth to Groundwater	Depth to groundwater in the Oakey Creek Alluvium aquifer was between 4.499 mbtoc (MW229) and 16.214 mbtoc (MW235). Groundwater elevations in the Oakey Creek Alluvium aquifer were between 384.296 mAHD (MW264) and 401.034 mAHD (MW229). Depth to groundwater in the four monitoring wells screened in the Walloon Coal Measures (MW269, MW291, MW295 and MW297) was between 9.123 mbtoc (MW295) and 34.352 mbtoc (MW269). Groundwater elevations in the Walloon Coal Measures were between 367.606 and 393.714 mAHD. Groundwater gauging data are presented in **Table T1** in **Appendix B**.
Groundwater Flow Direction	Inferred groundwater contours and groundwater flow directions in the Oakey Creek Alluvium aquifer at the Site between 19 and 23 October 2020 are shown on **Figure 5** in **Appendix A**. The inferred local groundwater flow direction is from east to west.

Item	Observation
Geochemical Parameters	Groundwater geochemical parameters were measured prior to collecting groundwater samples. The readings are presented in **Table T1** in **Appendix B** and are summarised below: Oakey Creek Alluvium • Electrical conductivity ranged from 311.5 µS/cm (MW232) to 7,236 µS/cm (MW299) indicating fresh to brackish conditions. • pH ranged from 6.76 (MW299) to 8.38 (MW038). pH results generally indicated near neutral conditions. pH was not recorded for all monitoring wells due to a broken sensor on the water quality meter. • Corrected redox ranged from 96.2 mV (MW257) to 597.2 mV (MW172) indicating mildly to moderately reducing conditions. • Temperature ranged from 17.0°C (MW003) to 27.4°C (MW198). • The dissolved oxygen results ranged between 0.47 (MW264) and 5.18 (MW249) mg/L indicating poorly oxygenated to well oxygenated conditions. Walloon Coal Measures • Electrical conductivity ranged from 888 µS/cm (MW232) to 2,260 µS/cm indicating fresh to brackish conditions. • pH was not recorded due to a broken sensor on the water quality meter. • Corrected redox ranged from -39.5mV to 252.5 mV indicating moderately reducing conditions. • Temperature was between 21.9°C and 22.5°C. • The dissolved oxygen results ranged between 0.32 (MW291) and 0.48 mg/L indicating poorly oxygenated conditions.

4.1.1 PFAS Groundwater Analytical Results

The PFAS groundwater analytical results from this sampling event are presented in **Table T2** in **Appendix B**. There were no first-time detections or first-time exceedances of the human health guideline values in the October 2020 sampling event for sum of PFHxS and PFOS and PFOA compared to the historical dataset. Forty-three of the 52 groundwater samples exceeded the human health drinking water guideline for sum of PFHxS and PFOS with 21 samples exceeding the PFOA guideline. All 43 groundwater samples that exceeded the limit of reporting exceeded the ecological guideline for PFOS for 99% protection of freshwater ecosystems. None of the groundwater samples exceeded the PFOA ecological guideline.

During the March / April 2020 sampling event, new maximum concentrations of 6:2 FTS were recorded in 23 monitoring wells, which was considered anomalous. The October 2020 sampling event recorded two new maximum concentrations of 6:2 FTS in the monitoring wells. Both were located on-Site (0.94 µg/L in MW174 and 6.4 µg/L in MW222). Three off-Site monitoring wells screened in the Walloon Coal Measures were additionally sampled in October 2020 to monitor for 6:2 FTS. Concentrations in all three monitoring wells were reported at lower concentrations compared to the March / April 2020 results.

4.1.2 Non-PFAS Groundwater Analytical Results

The non-PFAS groundwater analytical results from this sampling event are presented in **Table T3** in **Appendix B.**

5.0 Summary and Next Sampling Event

5.1 Summary of Monitoring Event

A targeted groundwater monitoring event was completed within and outside of the AACO Management Area, between 19 and 23 October 2020. The program included sampling of groundwater from 44 monitoring wells and eight off-Site residential bores.

Table 5 summarises the findings of the targeted October 2020 sampling event and the recommended actions.

Table 5 Summary of Sampling Event

Item	Comment	Recommended Actions
Access to sampling locations	48 of the 49 monitoring well/bore locations were accessible and able to be sampled. Access to MW084 was declined and was replaced by MW056 for this sampling event, which is located approximately 160 m west-north-west of MW084. MW264 was previously buried beneath creek sediments during the previous March/April 2020 sampling event. This well was able to be accessed and sampled as part of this sampling event. Three additional monitoring wells were sampled during the sampling event to resample wells that recorded detectable concentrations of 6:2 FTS in the March / April 2020 sampling event.	Monitoring well MW084 to be replaced by MW056 in the program.
Monitoring well network condition	No issues were identified in 50 out of 52 monitoring wells / residential bores sampled. Damage was identified to two monitoring wells: • The stick-up monument for MW242 on Defence-leased land has been damaged. • The gatic of MW187 within the sports oval at AACO has been damaged.	Defence to contact leaseholder to request repair of the monument cover for MW242. The gatic for MW187 requires repair.
Analytical Results	PFAS concentrations in the 52 groundwater samples from monitoring wells and bores sampled were consistent with historical results. 6:2 FTS concentrations were generally consistent with historical data. Two monitoring wells, both located on-Site recorded new maximum concentrations. 6:2 FTS concentrations in the three off-Site monitoring wells all reported lower concentrations compared to March / April 2020 results.	Ongoing monitoring in accordance with the OMP.
First-time detections of Sum of PFHxS+PFOS or PFOA	There were no first-time detections of sum of PFHxS+PFOS or PFOA in any of the groundwater wells and residential bores sampled.	Ongoing monitoring in accordance with the OMP.
First-time exceedance of NEMP drinking water guideline values	There were no first-time exceedances of the NEMP (HEPA, 2020) drinking water guidelines.	Ongoing monitoring in accordance with the OMP.

5.2 Upcoming Sampling Events

An annual comprehensive event is scheduled for April 2021.

5.3 Upcoming Annual Interpretive Report

The next annual interpretative report is scheduled for September 2021.

6.0 References

AECOM, 2020, *PFAS OMP- AACO Sampling and Analysis Quality Plan*, Revision 1, September 2020.

ASC NEPM, 2013. *Schedule B2. National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) Schedule B2 Guideline on Site Characterisation*.

ASC NEPM, 2013. *Schedule B4. National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) Schedule B4 Guideline on Site-Specific Health Risk Assessment Methodology*.

ASC NEPM, 2013. *Schedule B7. National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) Schedule B7 Guideline on Derivation of Health-Based Investigation Levels*.

Australian and New Zealand Guidelines, 2018. *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.*

Department of Defence, 2019. *PFAS Management Area Plan- Army Aviation Centre, Oakey*, July 2019.

Department of Defence, July 2018, Amended August 2019, *Defence Contamination Management Manual.*

Department of Defence, March, 2020. *PFAS OMP Factual Reports – Interim Guidance for Preparation.*

Department of Health (DoH), 2019. *Health Based Guidance Values for PFAS for use in site investigations in Australia.* September 2019.

Heads of EPAs Australia and New Zealand, 2020. *PFAS National Environmental Management Plan*. January 2020.

Appendix A

Figures

Appendix A Figures

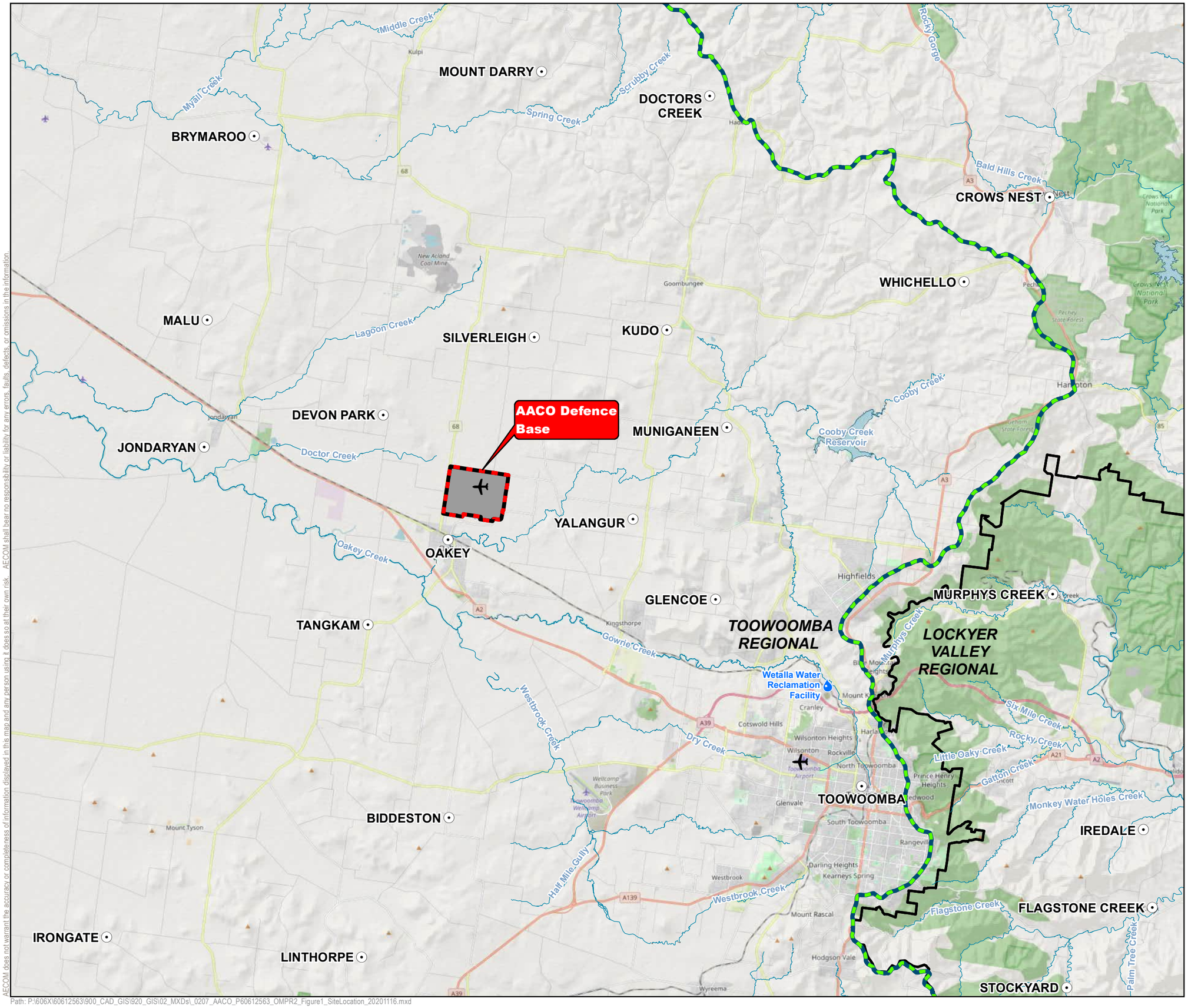
Figure 1 Location of AACO Site

Figure 2 Management Zones – Activities with Elevated PFAS Exposure

Figure 3 On-Site Groundwater Monitoring Locations

Figure 4 Off-Site Groundwater Monitoring Locations

Figure 5 Inferred Groundwater Contours – On-Site and Off-Site



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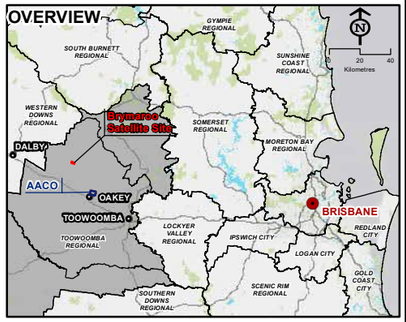
DATUM GDA 1994. PROJECTION MGA ZONE 56

0 2.5 5
Kilometres

1:200,000 (when printed at A3)

LEGEND

- Airport
- Watercourse/waterbody
- Great Dividing Range
- Investigation Area
- AACO Boundaries
- Local Governmental Area
- National Park



Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011

LOCATION OF AACO
PFAS OMP AACO SAMPLING EVENT
FACTUAL REPORT: OCTOBER 2020

PROJECT ID	60599637
CREATED BY	WW
LAST MODIFIED	joel.bryant; 16/11/2020
VERSION:	1

FIGURE 1

A3 size

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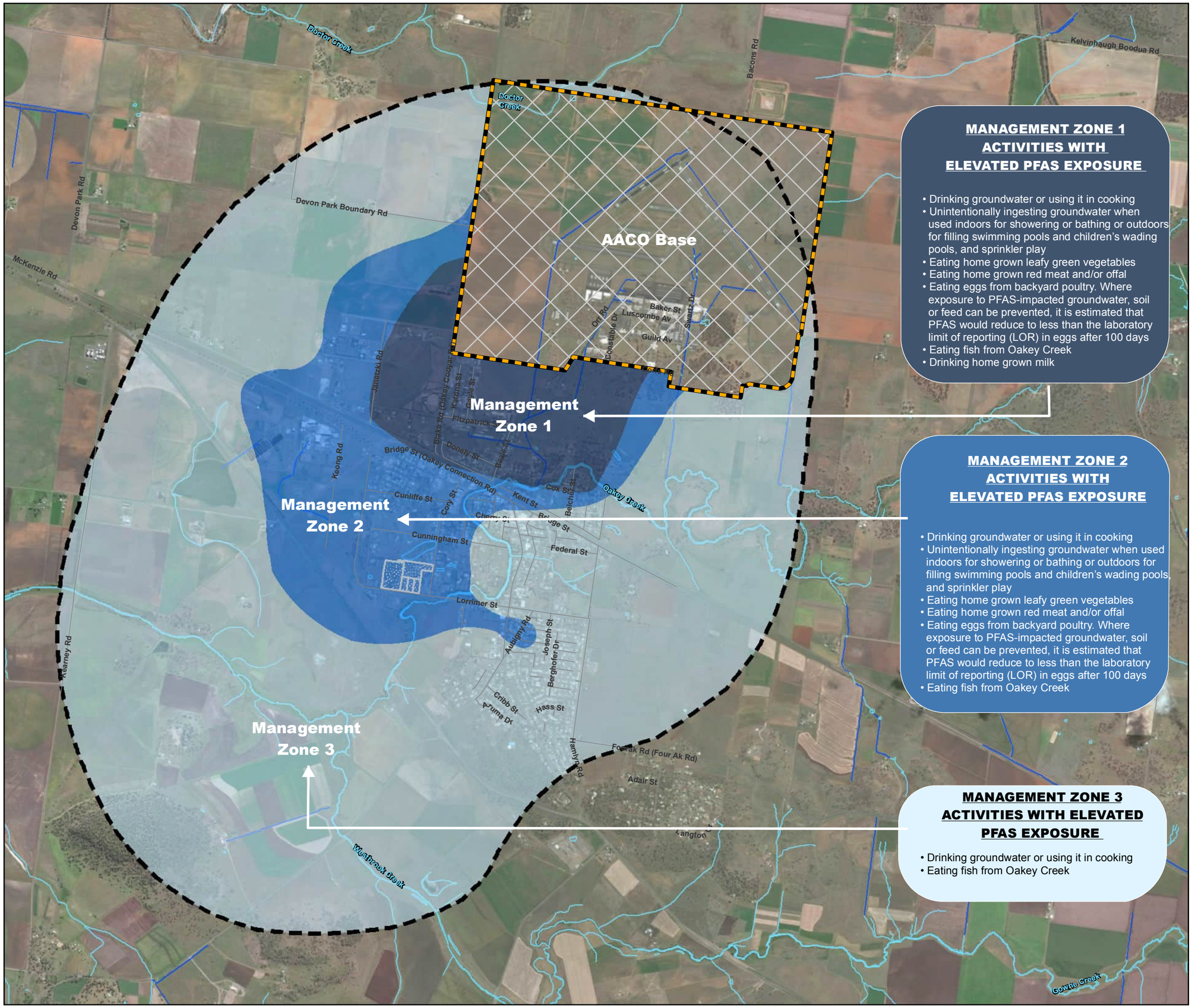

MANAGEMENT ZONE 1 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from backyard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek
- Drinking home grown milk

MANAGEMENT ZONE 2 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from backyard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek

MANAGEMENT ZONE 3 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Eating fish from Oakey Creek

LEGEND

- Drainage channel
- Watercourse/water body
- Former Landfill
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Area
- AACO Base

0 0.25 0.5 1 km

SCALE 1:35,000

SIZE A3

SHEET 1 of 1

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 2 : Management Zones - Activities with Elevated PFAS Exposure

PROJECT

PFAS OMP AACO SAMPLING EVENT
FACTUAL REPORT: OCTOBER 202 0

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DEPARTMENT OF DEFENCE

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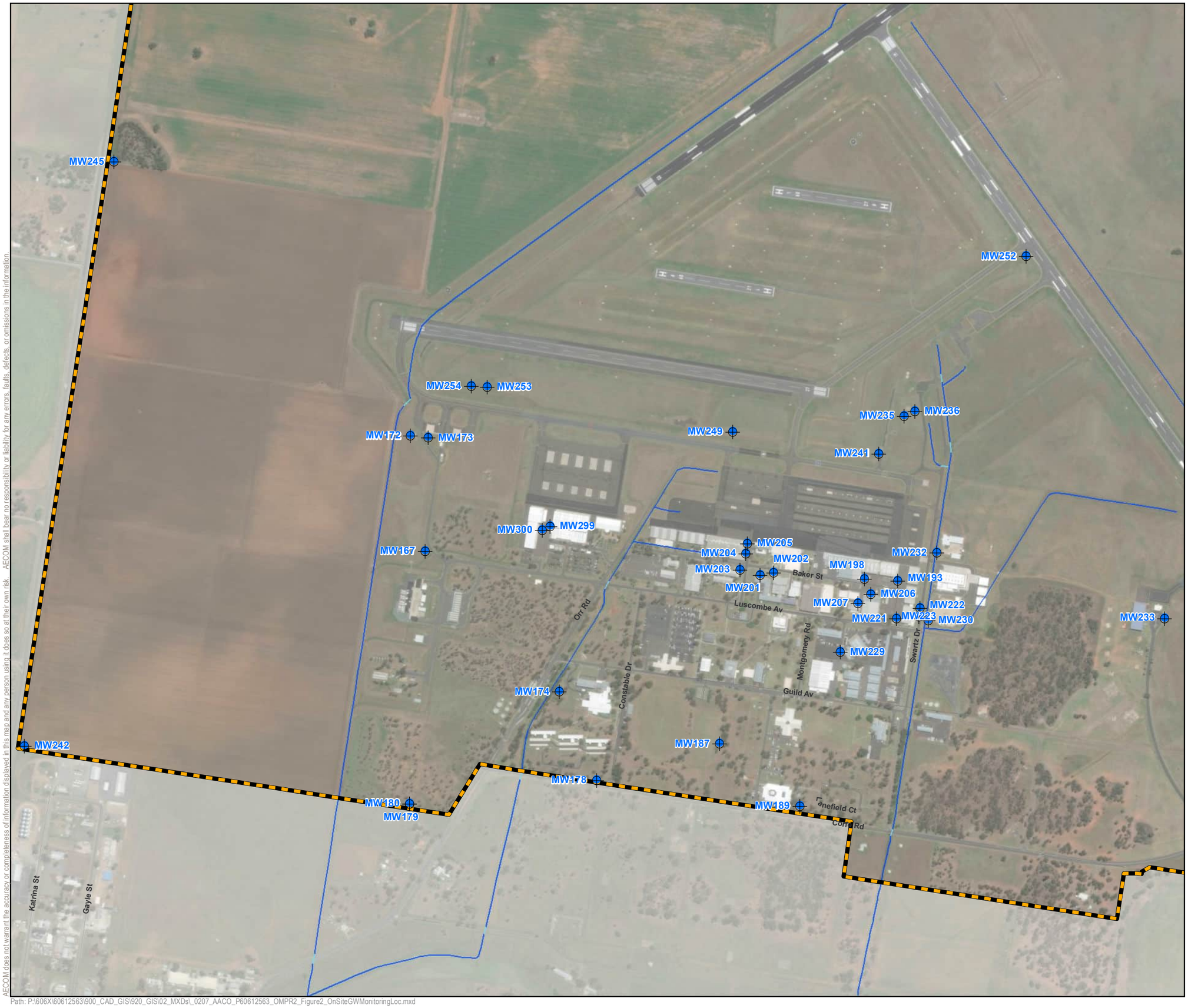

LEGEND

- On-Site Groundwater Monitoring Locations
- Drainage channel
- Watercourse/water body
- Site Boundary

N

0 75 150 300 m

AECOM

SCALE	1:9,100
SIZE	A3
SHEET	1 of 1
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 3: On-Site Groundwater Monitoring Locations

PROJECT

PFAS OMP AACO SAMPLING EVENT
FACTUAL REPORT: OCTOBER 2020

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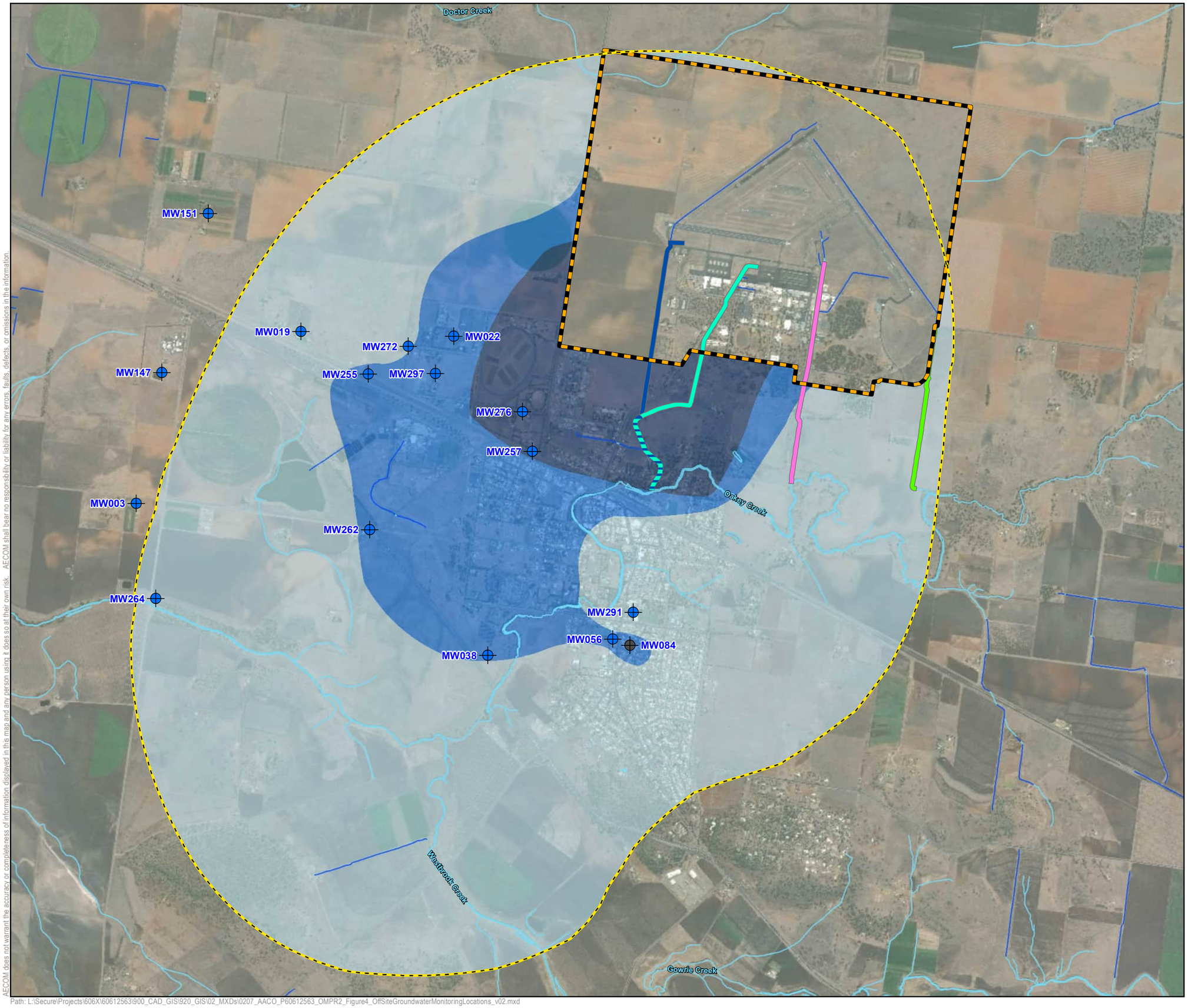

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LEGEND

SampleType

- Groundwater Monitoring Well
- Off-Site Groundwater Monitoring Locations - Declined
- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

Note that bores are not displayed for privacy reasons.

0 0.25 0.5 1 km

AECOM

SCALE 1:32,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 4: Off-Site Groundwater Monitoring Locations

PROJECT

PFAS OMP AACO SAMPLING EVENT
FACTUAL REPORT: OCTOBER/NOVEMBER 2019

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LEGEND

- Groundwater Well Location
- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Management Area
- Site Boundary

N

0 0.25 0.5 km

AECOM

SCALE 1:15,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 5: Inferred Groundwater Contours: October 2020

PROJECT

PFAS OMP AACO SAMPLING EVENT
FACTUAL REPORT: OCTOBER 2020

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Appendix B

Tables

Appendix B Tables

Table T1 Groundwater Gauging and Field Parameter Results

Table T2 Groundwater PFAS Analytical Results

Table T3 Groundwater Non-PFAS Analytical Results

Table T1 Groundwater Gauging and Quality Parameter Results

Property ID	Well ID	Date Hydrasleeve Installed	Date Hydrasleeve Sampled	Gauging Date	Well Depth (mbtoc)	Depth to LNAPL (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Corrected Groundwater Elevation (mAHD)	Condition of Gatic	DO (mg/L) *Field measurement*	EC (µS/cm) *Field measurement*	pH *Field measurement*	E_r (mV) *Field measurement*	E_h (mV)	Temp (°C) *Field measurement*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0207	MW003	None- tap	None- tap	21/10/2020	-	-	-	-	-	-	-	2.06	1500	7.59	90.9	295.9	17	Clear	Clear	No odour	No sheen	Tap
0207	MW019	None- tap	None- tap	21/10/2020	-	-	-	-	-	-	-	3.36	1753	7.43	172	377	18.4	Clear	Clear	No odour	No sheen	Tap
0207	MW022	None- tap	None- tap	22/11/2020	-	-	-	-	-	-	-	2.39	1527		101.7	306.7	23.1	Clear	Clear	No odour	No sheen	Tap
0207	MW038	None- tap	None- tap	21/10/2020	-	-	-	-	-	-	-	0.48	892	8.38	127.2	332.2	23.1	Clear	Clear	No odour	No sheen	Tap
0207	MW056	21/10/2020	23/10/2020	21/10/2020	20.15	-	11.009	-	-	-	Good	1.51	1690		200.9	405.9	21.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW134	None- tap	None- tap	21/10/2020	-	-	-	-	-	-	-	5.09	1727	7.56	137	342	21.3	Clear	Clear	No odour	No sheen	Tap
0207	MW147	None- tap	None- tap	21/10/2020	-	-	-	-	-	-	-	1.67	3144	7.31	72	277	21.5	Clear	Clear	No odour	No sheen	Tap
0207	MW151	None- tap	None- tap	21/10/2020	-	-	-	-	-	-	-	4.68	1581	7.47	82.5	287.5	20.7	Clear	Clear	No odour	No sheen	Tap
0207	MW167	None-bailed	None-bailed	19/10/2020	14.75	-	13.644	402.428	388.784	388.784	Good	3.55	1685	7.54	195.1	400.1	23.2	Turbid	Light Brown	No odour	No sheen	Grab sample with bailer due to insufficient column to deploy hydrasleeve.
0207	MW172	30/03/2020	20/10/2020	19/10/2020	17.2	-	14.179	402.818	388.639	388.639	Good	2.92	1222	7.41	392.2	597.2	19.7	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW173	26/03/2020	20/10/2020	19/10/2020	17.99	-	14.564	403.262	388.698	388.698	Good	3.43	1474	7.45	362.3	567.3	20.7	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW174	19/10/2020	20/10/2020	19/10/2020	29.96	-	14.845	404.072	389.227	389.227	Good	4.29	2712	7.45	57.3	262.3	21	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW178	26/03/2020	19/10/2020	19/10/2020	17.4	-	13.961	403.513	389.552	389.552	Good	0.9	3166	7.14	-47.2	157.8	23.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW179	19/10/2020	20/10/2020	19/10/2020	20.9	-	14.402	403.000	388.598	388.598	Good	0.61	3522	7.18	176	381	22.2	Clear	Clear		No sheen	Hydrasleeve
0207	MW187	25/03/2020	20/10/2020	20/10/2020	18.3	-	14.727	404.576	389.849	389.849	Good	0.6	3114	7.26	135.8	340.8	21.6	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW189	25/03/2020	20/10/2020	20/10/2020	21.04	-	14.937	405.431	390.494	390.494	Good	1.04	3501	7.35	131.1	336.1	21.8	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW193	25/03/2020	20/10/2020	19/10/2020	19.72	-	15.617	405.676	390.059	390.059	Good	0.51	5114	7.1	-14.1	190.9	24	Clear	Clear	HC odour	Sheen	Hydrasleeve
0207	MW198	25/03/2020	19/10/2020	19/10/2020	13.5	-	7.658	405.505	397.847	397.847	Good	0.9	2551	7.06	106.4	311.4	27.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW201	26/03/2020	23/10/2020	22/10/2020	19.87	-	15.211	404.900	389.689	389.689	Good	0.79	2947	-	208.3	413.3	22	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW202	30/03/2020	23/10/2020	22/10/2020	19.14	-	15.273	405.100	389.827	389.827	Good	1.57	2414	-	183.9	388.9	22.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW203	25/03/2020	22/10/2020	21/10/2020	20.11	-	15.395	405.100	389.705	389.705	Good	1.45	2021	-	256.3	461.3	19.4	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW204	25/03/2020	22/10/2020	22/10/2020	19.99	-	14.983	405.200	390.217	390.217	Good	2.64	3151	-	160.9	365.9	21.8	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW205	26/03/2020	22/10/2020	22/10/2020	20.11	-	16.023	405.700	389.677	389.677	Good	1.91	1823	-	159.9	364.9	23.3	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW206	26/03/2020	19/10/2020	19/10/2020	19.14	-	14.467	405.72	391.253	391.253	Good	3.28	3813	7.42	123.2	328.2	23.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW221	25/03/2020	19/10/2020	19/10/2020	19.49	-	15.475	405.496	390.021	390.021	Good	1.94	1649	7.54	111.1	316.1	22.4	Turbid	Clear	No odour	No sheen	Hydrasleeve
0207	MW222	25/03/2020	19/10/2020	19/10/2020	19.16	-	15.694	405.658	389.964	389.964	Good	3.89	1999	7.87	161	366	21.1	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW223	25/03/2020	19/10/2020	19/10/2020	20.14	-	15.723	405.788	390.065	390.065	Good	4.77	1828	7.15	136.5	341.5	21.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW229	25/03/2020	20/10/2020	20/10/2020	15.66	-	4.499	405.533	401.034	401.034	Good	0.68	1518	7.68	115.4	320.4	25.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW230	25/03/2020	19/10/2020	19/10/2020	16.02	-	15.254	405.416	390.162	390.162	Good	3.87	1440	7.47	161.8	366.8	21.8	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW232	1/04/2020	20/10/2020	20/10/2020	12.02	-	11.278	405.898	394.620	394.620	Good	4.89	311.5	7.28	160.2	365.2	24.2	Clear	Clear	No odour	No sheen	Hydrasleeve. Parameters collected with bailer as hydrasleeve was not full.
0207	MW233	26/03/2020	21/10/2020	21/10/2020	17.85	-	15.854	406.470	390.616	390.616	Good	2.39	871	7.53	164.4	369.4	23	Turbid	Light Brown	No odour	No sheen	Hydrasleeve
0207	MW235	1/04/2020	20/10/2020	20/10/2020	22.63	-	16.214	406.308	390.094	390.094	Good	1.9	1550	7.26	196.5	401.5	22.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW236	1/04/2020	None-bailed	20/10/2020	16.75	-	15.961	405.653	389.692	389.692	Good	2.54	1715	7.08	184.3	389.3	22.1	Turbid	Light Brown	No odour	No sheen	Grab sample with bailer due to insufficient water column for hydrasleeve.
0207	MW241	1/04/2020	20/10/2020	19/10/2020	18.09	-	15.851	405.883	390.032	390.032	Damaged	3.87	832	7.82	199.4	404.4	22.1	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW242	26/03/2020	23/10/2020	20/10/2020	20.11	-	14.772	402.030	387.258	387.258	Good	1.26	1611	-	126	331	22.3	Low	Clear	No odour	No sheen	Hydrasleeve. Well standpipe partially repaired since last visit & J cap replaced.
0207	MW245	26/03/2020	20/10/2020	20/10/2020	21.89	-	15.754	402.981	387.227	387.227	Good	3.15	1582	7.13	153.4	358.4	25	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW249	1/04/2020	20/10/2020	19/10/2020	18.84	-	15.138	404.769	389.631	389.631	Good	5.18	1511	7.68	198.7	403.7	21.1	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW252	1/04/2020	20/10/2020	20/10/2020	16.65	-	15.633	406.162	390.529	390.529	Good	1.35	545	7.13	169.9	374.9	22.5	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW253	1/04/2020	20/10/2020	19/10/2020		-	14.249	403.079	388.830	388.830	Good	0.62	1999	7	207.6	412.6	23.6	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW254	1/04/2020	20/10/2020	19/10/2020	16.41	-	14.228	403.050	388.822	388.822	Good	1.79	1436	7.05	276	481	22.9	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW255	26/03/2020	21/10/2020	20/10/2020	24.05	-	13.086	397.784	384.698	384.698	Good	2.69	2334	7.42	169.9	374.9	20.1	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW257	26/03/2020	21/10/2020	21/10/2020	23.86	-	14.653	400.833	386.180	386.180	Good	0.5	650	7.33	-108.8	96.2	21.1	Low	Clear	Organic Odour	No sheen	Hydrasleeve
0207	MW262	24/03/2020	21/10/2020	21/10/2020	17.84	-	12.965	398.329	385.364	385.364	Good	0.79	1798	7.65	99.6	304.6	21.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW264	21/10/2019	22/10/2020	22/10/2020	12.05	-	8.459	392.755	384.296	384.296	Good	0.47	2492	-	-14.4	190.6	23.2	Low	Light Grey	No odour	No sheen	Hydrasleeve
0207	MW269	25/03/2020	21/10/2020	21/10/2020	87.16	-	34.352	401.958	367.606	367.606	Good	-	2260	-	-244.5	-39.5	-	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW272	26/03/2020	21/10/2020	21/10/2020	20.03	-	12.734	397.972	385.238	385.238	Good	2.49	2244	7.47	197	402	20.8	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW276	26/03/2020	21/10/2020	21/10/2020	19.94	-	14.739	400.474	385.735	385.735	Good	0.66	2308	7.16	40	245	21.1	Low	Clear	Organic Odour	No sheen	Hydrasleeve
0207	MW291	25/03/2020	22/10/2020	21/10/2020	56.23	-	24.218	403.709	379.491	379.491	Good	0.32	1635	-	47.5	252.5	22.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW295	25/03/2020	21/10/2020	21/10/2020	69.84	-	9.123	402.837	393.714	393.714	Good	-	888	-	-194.5	10.5	-	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW297	25/03/2020	22/10/2020	22/10/2020	81.9	-	23.194	399.23	376.036	376.036	Good	0.48	1457	-	24.9	229.9	21.9	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW299	26/03/2020	20/10/2020	20/10/2020	15.46	-	12.332	403.970	391.638	391.638	Good	0.69	7236	6.76	127.2	332.2	24.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW300	24/03/2020	None- bailed	20/10/2020	16.45	-	15.578	403.715	388.137	388.137	Good	1.49	6691	6.83	202	407	23.7	Clear	Clear	No odour	No sheen	Grab sample collected with bailer due to insufficient column.

mbtoc is metres below top of casing
mAHD is metres above Australian height datum
LNAPL is light non-aqueous phase liquid
DO is dissolved oxygen
EC is electrical conductivity
E_h is oxidation reduction potential
Oxidation reducation potential (E_r) measured with a platinum electrode and a silver/silver chloride reference electrode (E_r) and converted to E_h by $E_h = E_r + 205$ mV (based on a groundwater temperature of 21°C)
Temp is Temperature
µS/cm is microsiemens per centrimetre
ºC is degrees Celcius
mV is millivolts
pH was not measured at all locations due to a faulty sensor on the water quality meter.

Table T2 Groundwater PFAS Analytical Results

		Sum of PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFDoDA	PFTeDA	PFTrDA	PFUnDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MFOSAA	EtFOSAA	6:2 FTS	10:2 FTS	4:2 FTS	8:2 FTS	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	µg/L
	LOR	0.01	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	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
PFAS NEMP (2020) Human Health Drinking Water		**0.07**											**0.56**																		
PFAS NEMP (2020) Ecological Freshwater 99% Species Protection							*0.00023*						*19*																		

Location ID	Sample ID	Lab Report Number	Sample Date																													
MW003	0207_MW003_201021	EB2027835	21/10/2020	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.01
MW019	0207_MW019_201021	EB2027844	21/10/2020	0.03	<0.02	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	0.03
MW022	0207_MW022_201022	EB2027828	22/10/2020	**0.84**	0.03	0.03	0.24	0.03	*0.6*	<0.02	<0.1	<0.02	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	0.99
MW038	0207_MW038_201021	EB2027843	21/10/2020	**0.56**	0.03	0.03	0.18	<0.02	*0.38*	<0.02	<0.1	<0.02	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	0.68
MW056	0207_MW056_201023	EB2027826	23/10/2020	**0.31**	0.03	0.03	0.25	<0.02	*0.06*	<0.02	<0.1	0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	0.45
MW134	0207_MW134_201021	EB2027842	21/10/2020	**0.09**	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	0.09
MW147	0207_MW147_201021	EB2027841	21/10/2020	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.01
MW151	0207_MW151_201021	EB2027840	21/10/2020	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.01
MW167	0207_MW167_201019	EB2027817	19/10/2020	**12.1**	0.85	0.7	3.68	0.38	*8.45*	<0.02	0.28	0.4	1.74	0.28	0.52	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	17.3
MW172	0207_MW172_201020	EB2027817	20/10/2020	**6.01**	0.33	0.34	2.05	0.15	*3.96*	<0.02	0.5	1.47	1.36	1.09	**0.64**	0.14	0.07	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	0.86	<0.05	<0.05	1.42	14.4
MW173	0207_MW173_201020	EB2027817	20/10/2020	**4.94**	0.29	0.29	2.67	0.18	*2.27*	<0.02	0.3	0.97	1.28	0.58	**0.56**	0.12	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	0.54	<0.05	<0.05	<0.05	10
MW174	0207_MW174_201020	EB2027817	20/10/2020	**0.18**	<0.6	0.02	0.09	<0.02	*0.09*	<0.02	<0.2	0.16	0.09	0.06	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	0.94	<0.05	<0.05	<0.05	1.45
MW178	0207_MW178_201019	EB2027817	19/10/2020	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW179	0207_MW179_201020	EB2027817	20/10/2020	**5.31**	0.52	0.43	2.3	0.23	*3.01*	<0.02	0.2	0.29	1.47	0.23	0.35	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.03
MW187	0207_MW187_201020	EB2027817	20/10/2020	**0.94**	0.06	0.08	0.6	0.03	*0.34*	<0.02	<0.1	0.02	0.11	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.27
MW189	0207_MW189_201020	EB2027817	20/10/2020	**0.2**	<0.02	<0.02	0.08	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.2
MW193	0207_MW193_201020	EB2027817	20/10/2020	**34.4**	3.2	3.48	17.1	1.68	*17.3*	<0.07	3.9	2.31	9.39	2.42	**3.54**	<0.07	<0.07	<0.07	<0.18	<0.07	<0.07	<0.07	<0.18	<0.18	<0.18	<0.18	<0.07	<0.07	0.13	<0.07	<0.07	<0.07	64.4
MW198	0207_MW198_201019	EB2027817	19/10/2020	**18.5**	0.6	0.66	4.51	0.6	*14*	<0.04	0.5	0.82	1.89	0.51	**0.86**	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	<0.04	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	0.1	<0.05	<0.05	<0.05	25
MW201	0207_MW201_201023	EB2027817	23/10/2020	**105**	10.2	10.8	69	4.06	*36.2*	<0.19	<0.9	3.44	16	2.29	**4.36**	<0.19	<0.19	<0.19	<0.47	<0.19	<0.19	<0.19	<0.47	<0.47	<0.47	<0.47	<0.19	<0.19	0.41	<0.19	<0.19	<0.19	157
MW202	0207_MW202_201023	EB2027817	23/10/2020	**362**	7.78	9.3	80.3	8.62	*282*	<0.4	<2	4.15	16.5	2.48	**6.87**	<0.4	<0.4	<0.4	<1	<0.4	<0.4	<0.4	<1	<1	<1	<1	<0.4	<0.4	0.84	<0.4	<0.4	<0.4	419
MW203	0207_MW203_201022	EB2027817	22/10/2020	**15.9**	1.59	1.82	11.2	0.62	*4.71*	<0.04	0.3	0.62	3.15	0.56	**0.89**	<0.04	<0.04	<0.04	<0.1	<0.04	<0.04	<0.04	<0.1	<0.1	<0.1	<0.1	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	25.5
MW204	0207_MW204_201022	EB2027817	22/10/2020	**126**	13.6	16.2	101	4.67	*25.3*	<0.2	1.5	4.67	21.8	3.93	**6.12**	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	0.22	<0.2	<0.2	<0.2	199
MW205	0207_MW205_201022	EB2027817	22/10/2020	**14.5**	1.41	1.5	8.79	0.52	*5.72*	<0.04	<0.2	0.51	2.38	0.4	**0.62**	<0.04	<0.04	<0.04	<0.1	<0.04	<0.04	<0.04	<0.1	<0.1	<0.1	<0.1	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	21.8
MW206	0207_MW206_201019	EB2027817	19/10/2020	**10.9**	0.78	0.75	5.6	0.38	*5.27*	<0.04	<0.2	0.35	1.43	0.36	**0.61**	<0.04	<0.04	<0.04	<0.1	<0.04	<0.04	<0.04	<0.1	<0.1	<0.1	<0.1	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	15.5
MW221	0207_MW221_201019	EB2027817	19/10/2020	**4.89**	0.4	0.4	2.16	0.19	*2.73*	<0.02	0.18	0.3	1.04	0.28	0.42	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.1
MW222	0207_MW222_201019	EB2027817	19/10/2020	**26.7**	1.67	1.95	12.1	1.17	*14.6*	<0.1	1.4	4.71	8.54	3.76	**5.28**	0.86	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	6.4	<0.1	<0.1	0.1	62.5
MW223	0207_MW223_201019	EB2027817	19/10/2020	**23.7**	1.02	1.11	8.66	0.8	*15*	<0.04	5.8	28.7	13.3	7.69	**8.44**	2.14	0.06	<0.04	<0.1	<0.04	<0.04	0.05	<0.1	<0.1	<0.1	<0.1	<0.04	<0.04	5	<0.05	<0.05	0.61	98.4
MW229	0207_MW229_201020	EB2027817	20/10/2020	**26.3**	0.6	0.84	6.4	0.46	*19.9*	<0.07	<0.4	0.26	1.62	0.16	0.43	<0.07	<0.07	<0.07	<0.18	<0.07	<0.07	<0.07	<0.18	<0.18	<0.18	<0.18	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	30.7
MW230	0207_MW230_201019	EB2027817	19/10/2020	**15.3**	1.11	1.11	6.72	0.77	*8.61*	<0.04	5	22.9	11.9	6.27	**5.32**	0.65	<0.04	<0.04	<0.1	<0.04	<0.04	<0.04	<0.1	<0.1	<0.1	<0.1	<0.04	<0.04	2.36	<0.05	<0.05	<0.05	72.7
MW232	0207_MW232_201020	EB2027817	20/10/2020	**17.1**	0.23	0.32	2.82	0.28	*14.3*	<0.04	0.8	2.31	1.56	1.08	**1.16**	0.38	0.45	<0.04	<0.09	<0.04	<0.04	0.04	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	0.18	<0.05	<0.05	1.78	27.7
MW233	0207_MW233_201021	EB2027817	21/10/2020	**1.27**	0.21	0.18	1	<0.02	*0.27*	<0.02	<0.1	<0.06	0.19	0.04	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.94
MW235	0207_MW235_201020	EB2027817	20/10/2020	**18.1**	4.86	4.77	13.7	0.28	*4.38*	<0.04	1.4	1.97	9.48	0.67	0.54	<0.04	<0.04	<0.04	<0.1	<0.04	<0.04	<0.04	<0.1	<0.1	<0.1	<0.1	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	42
MW236	0207_MW236_201020	EB2027817	20/10/2020	**15.2**	3.43	2.3	8.96	0.56	*6.29*	<0.02	1.21	1.15	5.06	0.49	**0.89**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	30.3
MW241	0207_MW241_201020	EB2027817	20/10/2020	**4.06**	0.17	0.16	1.42	0.09	*2.64*	<0.02	<0.1	0.08	0.24	0.06	0.13	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.99
MW242	0207_MW242_201023	EB2027817	23/10/2020	**0.33**	0.03	<0.02	0.12	<0.02	*0.21*	<0.02	<0.1	<0.02	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	0.1	<0.05	<0.05	<0.05	0.5
MW245	0207_MW245_201020	EB2027817	20/10/2020	**0.35**	0.04	0.04	0.22	<0.02	*0.13*	<0.02	<0.1	<0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.5
MW249	0207_MW249_201020	EB2027817	20/10/2020	**4.08**	0.82	0.93	3.95	0.05	*0.13*	<0.02	0.2	0.41	1.62	0.17	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.38
MW252	0207_MW252_201020	EB2027817	20/10/2020	**22.8**	1.16	1.12	6.55	0.46	*16.3*	<0.1	<0.5	0.65	1.55	0.38	**0.68**	<0.1	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	28.8
MW253	0207_MW253_201020	EB2027817	20/10/2020	**32.1**	1.75	1.97	13.7	0.94	*18.4*	<0.04	0.6	0.72	2.71	0.34	**0.88**	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	0.12	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	42.1
MW254	0207_MW254_201020	EB2027817	20/10/2020	**22.6**	1.82	1.62	11.2	0.27	*11.4*	<0.1	0.58	1.08	3.93	0.33	**0.65**	<0.1	<0.1	<0.1	<0.25	<0.1	<0.1	0.13	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	33
MW255	0207_MW255_201021	EB2027817	21/10/2020	**0.19**	<0.02	0.02	0.12	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.23
MW257	0207_MW257_201021	EB2027817	21/10/2020	0.06	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06
MW262	0207_MW262_201021	EB2027817	21/10/2020	**0.19**	0.07	0.02	0.13	<0.02	*0.06*	<0.02	<0.1	<0.02	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.32
MW264	0207_MW264_201022	EB2027817	22/10/2020	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW269	0207_MW269_201021	EB2027838	21/10/2020	**0.08**	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08
MW272	0207_MW272_201021	EB2027817	21/10/2020	**0.65**	0.07	0.07	0.44	<0.02	*0.21*	<0.02	<0.1	0.02	0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.93
MW276	0207_MW276_201021	EB2027817	21/10/2020	**19.8**	0.96	1.16	8.9	0.63	*10.9*	<0.02	0.35	0.38	1.78	0.29	**0.56**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	25.9
MW291	0207_MW291_201022	EB2027833	22/10/2020	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	0.05	<0.05	<0.05	<0.05	0.05
MW295	0207_MW295_201021	EB2027838	21/10/2020	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	0.25	<0.05	<0.05	<0.05	0.25
MW297	0207_MW297_201022	EB2027831	22/10/2020	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW299	0207_MW299_201020	EB2027817	20/10/2020	**26.4**	4.27	4.66	17.5	0.84	*8.94*	<0.07	1.5	2.28	10.7	2.04	**3.1**	<0.07	<0.07	<0.07	<0.18	<0.07	<0.07	<0.07	<0.18	<0.18	<0.18	<0.18	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	55.8
MW300	0207_MW300_201020	EB2027817	20/10/2020	**93.8**	11.2	11.9	48.2	3.98	*45.6*	<0.18	3.4	5.16	24.1	4.87	**8.02**	<0.18	<0.18	<0.18	<0.44	<0.18	<0.18	<0.18	<0.44	<0.44	<0.44	<0.44	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	166

LOR is limit of reporting
µg/L is micrograms per litre
'-' denotes no analysis undertaken
'<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
NHMRC is National Health Medical Research Council
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values

Table T3 Groundwater Non-PFAS Analytical Results

	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Calcium (Filtered)	Magnesium (Filtered)	Potassium (Filtered)	Sodium (Filtered)	Cations Total	Sulfate as SO4	Chloride	Carbonate as CaCO3	Anions Total	Ionic Balance	Dissolved Organic Carbon	Total Suspended Solids
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	mg/L	mg/L	mg/L	meq/L	%	mg/L	mg/L
LOR	1	1	1	1	1	1	1	0.01	1	1	1	0.01	0.01	1	5
MW172	270	<1	270	65	45	2	185	15	14	344	<1	15.4	1.13	4	162
MW198	875	<1	875	70	92	2	664	40	501	434	<1	40.2	0.2	7	8
MW202	786	<1	786	47	62	2	504	29.4	105	408	<1	29.4	0.04	12	96
MW223	425	<1	425	89	66	2	276	21.9	72	419	<1	21.8	0.27	3	159
MW232	105	<1	105	14	12	<1	31	3.03	4	15	<1	2.6	-	6	6
MW236	318	<1	318	108	74	4	177	19.3	11	462	<1	19.6	0.86	5	9150
MW253	388	<1	388	103	70	3	274	22.9	8	545	<1	23.3	0.86	6	116
MW255	174	<1	174	124	56	3	326	25	29	754	<1	25.3	0.59	<1	62
MW269	<1	278	321	59	<1	18	156	10.2	4	193	43	11.9	7.91	22	118
MW299	710	<1	710	300	264	5	961	78.6	35	2340	<1	80.9	1.44	10	30

Location ID	Sample ID	Lab Report Number	Sample Date
MW172	0207_MW172_201020	EB2027817	20/10/2020
MW198	0207_MW198_201019	EB2027817	19/10/2020
MW202	0207_MW202_201023	EB2027817	23/10/2020
MW223	0207_MW223_201019	EB2027817	19/10/2020
MW232	0207_MW232_201020	EB2027817	20/10/2020
MW236	0207_MW236_201020	EB2027817	20/10/2020
MW253	0207_MW253_201020	EB2027817	20/10/2020
MW255	0207_MW255_201021	EB2027817	21/10/2020
MW269	0207_MW269_201021	EB2027838	21/10/2020
MW299	0207_MW299_201020	EB2027817	20/10/2020

LOR is limit of reporting
mg/L is milligrams per litre
meq/l is milliequivalents per litre
'-' denotes no analysis undertaken
'<' denotes concentration is less than

Appendix C

Analytical Data Validation

Appendix C Analytical Data Validation

DATA VALIDATION REPORT

Project No.:	60612563	**Validation by:** Camden McCosker		**Date:**	09/11/20
Client:	Department of Defence				
Site:	Army Aviation Centre Oakey				
Matrix type:	Groundwater	**Data verified by:** James Peachey		**Date:**	17/11/20
No. of primary samples:	52 groundwater				
Laboratory:	ALS (Brisbane), NMI (Sydney)	**Project Manager:** James Peachey			
Lab reference:	EB2027817; EB2027826; EB2027828, EB2027831; EB2027833; EB2027835; EB2027838; EB2027840; EB2027841; EB2027842; EB2027843; EB2027844; AEC006_201027				

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 therefore considered appropriate for use to meet the project objectives.

Field QA/QC

Sampling personnel	Sampling was conducted by Camden McCosker on 19 – 23 October 2020.
Sampling Methodology	Samples were collected using appropriate methods as identified within the main body of the report.
Hydrasleeve duration	All Hydrasleeves were installed in monitoring wells for a minimum of 24 hours.
Chain of Custody (COC)	COC documents completed as per AECOM procedures.
Rinsate Blank (refer to **Table C2**)	Rinsate blank samples were collected at a frequency of one per day of sampling (five in total). All rinsates were collected from the decontaminated interface probe. PFAS concentrations were reported below the LOR for all analytes tested.
Frequency of field QC	Field duplicate (inter-laboratory duplicates) and triplicates (inter-laboratory duplicates) were collected in at a frequency of one in ten primary samples (total of six duplicate / triplicate pairs @ 11.5%).
Handling and preservation	Primary, duplicate and triplicate samples were received preserved and chilled at the laboratory. Sample receipt temperature was within the recommended range (<6°C) for all batches. All samples were received at the laboratory in appropriate sample containers with no sample container / preservation non-compliances noted.

Laboratory QA/QC

Holding time compliance	Samples were extracted and analysed within the 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 the national Measurement Institute (Sydney), also a NATA accredited laboratory.

Frequency of laboratory QC	The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, except: • Matrix spikes for PFAS (2.50%) which was below the expected rate of 5.00% in EB2027817 (40 samples in batch); The reason for insufficient matrix spikes being analysed for EB2027817 is unknown as the laboratory was provided with sufficient sample volume, however as all other QC results met control limits this is not expected to impact data quality.
Method Blank	Method blank concentrations were not detected above the LOR for all analytes tested.
Laboratory duplicate RPDs	Laboratory duplicate Relative Percentage Differences (RPD) were within control limits for all samples.
Laboratory control spike recovery	Laboratory Control Spikes (LCS) recoveries were within the control limits across all primary laboratory batches.
Matrix spike recovery	All Matrix Spike (MS) recoveries (where reported) were within control limits, except: • PFBS, PFPeS, PFHxS and PFHxA in 0207_MW206_201019 where MS recovery was not determined due to background level greater than or equal to four times spike level in EB2027817 • Sulfate as SO_4^- and Chloride in an anonymous sample where MS recovery was not determined due to background level greater than or equal to four times spike level in EB2027838 These non-conformances are not expected to impact data quality.
Surrogate spike recovery	Surrogate spike recoveries were within control limits.
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	Limits of Reporting (LORs) were sufficiently low to enable assessment against adopted screening levels except for PFOS for NEMP (HEPA, 2018) ecological guideline values for the 99% protection of freshwater species. The potential exists for concentrations of PFOS to be above the adopted guideline, but below the laboratory LOR. This should be taken into consideration when interpreting and using this data quantitatively where results are reported below LOR.
Field duplicate RPDs (refer to **Table C1**)	Field duplicate RPDs were reported within control limits except the following (the sample with the higher concentration is in bold): • **0207_MW193_201020** and 0207_QC134_201020 for PFBA (69%) The reason(s) for the discrepancy is unknown. As there is no adopted guideline for these PFAS compounds in sediment, the identified elevated RPD does not affect the interpretation of the data against guidelines but should be taken into consideration when interpreting the data quantitatively.
Field triplicate RPDs (refer to **Table C1)**	Field triplicate RPDs were reported within control limits with the exception of the following (the sample with the higher concentration is in bold): • **0207_MW173_201020** and 0207_QC232_201020 for 6:2 FTS (45%) • **0207_MW173_201020** and 0207_QC232_201020 for PFPeS (32%) • **0207_MW173_201020** and 0207_QC232_201020 for PFOS (35%) • **0207_MW193_201020** and 0207_QC234_201020 for PFHpS (42%) • **0207_MW193_201020** and 0207_QC234_201020 for PFHxA (32%) • **0207_MW272_201021** and 0207_QC235_201021 for PFOS (40%) • **0207_MW203_201022** and 0207_QC236_201022 for PFHpS (43%) • **0207_MW203_201022** and 0207_QC236_201022 for PFHxA (36%)

	The differences are considered to be due to different extraction methods between laboratories. As there are no adopted guidelines for the majority of these PFAS compounds, the identified elevated RPD does not affect the interpretation of the data against guidelines but should be taken into consideration when interpreting the data quantitatively. For compounds with adopted guidelines (i.e. PFOS and PFHxS in groundwater), it is noted that the primary sample consistently reported the higher concentration.
Other	
Other observations	Evaluation of the data does not indicate any first-time detections of PFHxS+PFOS or PFOA compounds above LOR and no new exceedances of human health guideline values. The pH probe on the water quality metre was damaged on the second last day of fieldwork and as such this parameter is not recorded for a number of monitoring locations. The loss of this data does not impact overall data interpretation.

Table C1 Groundwater Duplicate and Triplicate Analytical Results

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	Lab Report No.	EB2027817	EB2027817	RPD	AEC006_201027	RPD	EB2027817	EB2027817	RPD	AEC006_201027	RPD	EB2027817	EB2027817	RPD	AEC006_201027	RPD
	Sample ID	0207_MW178_201019	0207_QC131_201019		0207_QC231_201019		0207_MW173_201020	0207_QC132_201020		0207_QC232_201020		0207_MW245_201020	0207_QC133_201020		0207_QC233_201020	
	Sample Date	19/10/2020 15:00	19/10/2020 15:00		19/10/2020 15:00		20/10/2020 15:00	20/10/2020 15:00		20/10/2020 15:00		20/10/2020 15:00	20/10/2020 15:00		20/10/2020 15:00	
	Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**LOR**														
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	
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	
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	0.54	0.42	25	**0.34**	45	<0.05	<0.05	0	0.012	
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	
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	
EtFOSAA)	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	
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	
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	
MFOSAA	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	
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	
PFBS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.29	0.32	10	0.23	23	0.04	0.04	0	0.028	
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	0.3	<0.35	0	0.31	3	<0.1	<0.1	0	<0.05	
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	
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	0.012	0	<0.02	<0.02	0	<0.01	
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	
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.18	0.17	6	0.1	57	<0.02	<0.02	0	<0.01	
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.58	0.61	5	0.54	7	<0.02	<0.02	0	<0.01	
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	1.28	1.22	5	0.96	29	0.06	0.06	0	0.042	
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.12	0.12	0	0.099	19	<0.02	<0.02	0	<0.01	
FOSA	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	
PFPeS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.29	0.31	7	**0.21**	32	0.04	0.04	0	0.027	
PFPeA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	0.97	<0.98	0	0.99	2	<0.02	<0.02	0	<0.02	
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	
PFTrDA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	
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	
PFOS	µg/L	0.01 : 0.02 (Interlab)	<0.01	<0.01	0	<0.02	0	2.27	1.85	20	**1.6**	35	0.13	0.13	0	0.11	
PFOA	µg/L	0.01	<0.01	<0.01	0	<0.01	0	0.56	0.57	2	0.51	9	0.01	0.01	0	<0.01	
PFHxS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	2.67	2.9	8	2.3	15	0.22	0.23	4	0.19	

*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: 81 (1-10 x EQL); 50 (10-30 x EQL); 30 (> 30 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 C1 Groundwater Duplicate and Triplicate Analytical Results

AECOM Imagine it. Delivered.

Lab Report No.			EB2027817	EB2027817		AEC006_201027		EB2027817	EB2027817		AEC006_201027		EB2027817	EB2027817		AEC006_201027	
Sample ID			0207_MW193_201020	0207_QC134_201020	RPD	0207_QC234_201020	RPD	0207_MW272_201021	0207_QC135_201021	RPD	0207_QC235_201021	RPD	0207_MW203_201022	0207_QC136_201022	RPD	0207_QC236_201022	RPD
Sample Date			20/10/2020 15:00	20/10/2020 15:00		20/10/2020 15:00		21/10/2020 15:00	21/10/2020 15:00		21/10/2020 15:00		22/10/2020 15:00	22/10/2020 15:00		22/10/2020 15:00	
Sample Type			Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**LOR**															
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.07	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.07	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	0.13	0.14	7	0.13	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	0.047	0
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.07	<0.05	0	0.037	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.18	<0.1	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.1	<0.09	0	<0.02	0
EtFOSAA)	µg/L	0.02 : 0.01 (Interlab)	<0.07	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0
EtFOSE	µg/L	0.05	<0.18	<0.1	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.1	<0.09	0	<0.05	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.18	<0.1	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.1	<0.09	0	<0.02	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.07	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0
MeFOSE	µg/L	0.05	<0.18	<0.1	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.1	<0.09	0	<0.05	0
PFBS	µg/L	0.02 : 0.01 (Interlab)	3.2	3.36	5	3	6	0.07	0.07	0	0.051	31	1.59	1.67	5	1.5	6
PFBA	µg/L	0.1 : 0.05 (Interlab)	**3.9**	**1.9**	69	3	26	<0.1	<0.1	0	<0.05	0	0.3	<0.2	40	0.4	29
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.07	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.07	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.07	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0
PFHpS	µg/L	0.02 : 0.01 (Interlab)	1.68	1.85	10	**1.1**	42	<0.02	<0.02	0	<0.01	0	0.62	0.69	11	**0.4**	43
PFHpA	µg/L	0.02 : 0.01 (Interlab)	2.42	2.46	2	1.8	29	<0.02	<0.02	0	<0.01	0	0.56	0.56	0	0.44	24
PFHxA	µg/L	0.02 : 0.01 (Interlab)	9.39	9.8	4	**6.8**	32	0.1	0.11	10	0.078	25	3.15	3.34	6	**2.2**	36
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.07	0.05	0	0.038	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	0.015	0
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.07	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0
PFPeS	µg/L	0.02 : 0.01 (Interlab)	3.48	3.64	4	2.6	29	0.07	0.08	13	0.05	33	1.82	1.87	3	1.4	26
PFPeA	µg/L	0.02	2.31	2.3	0	1.9	19	0.02	0.02	0	0.02	0	0.62	0.68	9	0.62	0
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.18	<0.1	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.1	<0.09	0	<0.02	0
PFTrDA	µg/L	0.02	<0.07	<0.04	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.04	<0.04	0	<0.02	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.07	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0
PFOS	µg/L	0.01 : 0.02 (Interlab)	17.3	21.5	22	17	2	0.21	0.19	10	**0.14**	40	4.71	5.81	21	4.3	9
PFOA	µg/L	0.01	3.54	3.74	5	2.7	27	0.02	0.02	0	0.011	58	0.89	0.96	8	0.74	18
PFHxS	µg/L	0.02 : 0.01 (Interlab)	17.1	17.3	1	14	20	0.44	0.46	4	0.37	17	11.2	11.5	3	8.8	24

*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: 81 (1-10 x EQL); 50 (10-30 x EQL); 30 (> 30 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 Rinsate Analytical Results

AECOM Imagine it. Delivered.

	Lab Report Number	EB2027817	EB2027817	EB2027817	EB2027817	EB2027817
	Sample ID	0207_QC317_201019	0207_QC318_201020	0207_QC319_201021	0207_QC320_201022	0207_QC321_201023
	Sample Date	19/10/2020 15:00	20/10/2020 15:00	21/10/2020 15:00	22/10/2020 15:00	23/10/2020 15:00
	Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate
Chemical Name	**Units**	**LOR**					
10:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 FtS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSAA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
EtFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MeFOSA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MFOSAA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MeFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PFBS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFBA	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PFDS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDoDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHxA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFNA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
FOSA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFTeDA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PFTrDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFUnDA	µg/L	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
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFOA	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFHxS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Appendix D

Chain of Custody Forms

Appendix D Chain of Custody Forms

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AECOM

Chain of Custody

COC Page 1 of 4

AECOM Australia Pty Ltd Level 8, 540 Wickham Street Fortitude Valley, QLD, 4006 PO Box 1307 Fortitude Valley QLD 4006	**Email reports to:** [redacted]
Laboratory Details Lab. Name: Lab. Address: Contact Name: Lab. Ref:	Tel: Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Environmental Division Brisbane
Work Order Reference
EB2027817

[redacted]

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2	HOLD	
1	0207_MW167_201019	19/10		✓				✓		1x ZP	\						
2	0207_MW178_201019	"		✓				✓		3x ZP	\						LD + MS
3	0207_MW198_201019	"		✓			✓	✓		1x ZP, 1x P filtered	\	\	\	\	\		
4	0207_MW206-201019	"		✓				✓		2x ZP	\						LD
5	0207_MW221-201019	"		✓				✓		1x ZP	\						
6	0207_MW223_201019	"		✓				✓		1x ZP, 1x P 1x Vial	\	\	\	\	\		
7	0207_MW 222_201019	"		✓				✓		1x ZP	\						
8	0207_MW230_201019	"		✓				✓		"	\						
9	0207_MW174-201020	20/10		✓				✓		1x ZP	\						
10	0207_MW172-201020	"		✓			✓	✓		1x ZP, 1x P 1x Vial	\	\	\	\	\		
11	0207_MW173-201020	"		✓				✓		1x ZP	\						
12	0207_MW254-201020	"		✓				✓		3x ZP	\						LD + MS
13	0207_MW253-201020	"		✓			✓	✓		1x ZP, 1x P 1x Vial	\	\	\	\	\		
14	0207_MW249_201020	"		✓				✓		1x ZP	\						

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

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Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date: 23/10	Relinquished by: [redacted]	Signed:	Date:
Received by:	Signed:	Date:	Received by: [redacted]	Signed:	Date: 23/10/2020

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AECOM — **Chain of Custody** — COC Page 2 of 4

AECOM Australia Pty Ltd Level 8, 540 Wickham Street Fortitude Valley, QLD, 4006 PO Box 1307 Fortitude Valley QLD 4006	Email reports to: [redacted]	**Laboratory Details** Lab. Name: Lab. Address: Contact Name: Lab. Ref:
		Tel: Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat — 7. Project Manager: [redacted]	

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2	HOLD	Notes
15	0207_MW241-201020	20/10		✓				✓	(6)	2x ZP	✓						LD
16	0207_MW235-201020	"		✓				✓		1x ZP	✓						
17	0207_MW236-201020	"		✓			✓	✓		2x ZP, 1S 1x VOA	✓	✓	✓	✓	✓		
18	0207_MW232-201020	"		✓			✓	✓		"	✓	✓	✓	✓	✓		
19	0207_MW252-201020	"		✓				✓		1x ZP	✓						
20	0207_MW300-201020	"		✓				✓		"	✓						
21	0207_MW299-201020	"		✓			✓	✓		1x ZP, 1x P (Filt)	✓	✓	✓	✓	✓		
22	0207_MW245-201020	"		✓				✓		1x ZP	✓						
	0207_[redacted]																
23	0207_MW179-201020	"		✓				✓		1x ZP	✓						
24	0207_MW193-201020	"		✓				✓		"	✓						
25	0207_MW229-201020	"		✓				✓		"	✓						
26	0207_MW189-201020	"		✓				✓		"	✓						
27	0207_MW187-201020	"		✓				✓		"	✓						

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Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date: 23/10	Relinquished by:	Signed:	Date:		
Received by:	Signed:	Date:	Received by: [redacted]	Signed:	Date: 23/10/20		

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AECOM — Chain of Custody — COC Page 3 of 4

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: fil'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2	HOLD	Notes
28	0207_MW255-201021	21/10		✓			✓	✓		1x ZP, 1x P (x2 bottles)	✓	✓	✓	✓	✓		
29	0207_MW272-201021	21/10		✓				✓		1x ZP	✓						
30	0207_MW233-201021	"		✓				✓		3x ZP	✓						LD + MS
31	0207_MW262-201021	"		✓				✓		2x ZP	✓						LD
32	0207_MW257-201021	"		✓				✓		1x ZP	✓						
33	0207_MW276-201021	"		✓				✓		"	✓						
34	0207_MW203-201022	22/10		✓				✓		1x ZP	✓						
35	0207_MW204-201022	"		✓				✓		3x ZP	✓						LD + MS
36	0207_MW205-201022	"		✓				✓		2x ZP	✓						LD
37	0207_MW264-201022	"		✓				✓		1x ZP	✓						
38	0207_MW242-201023	23/10		✓				✓		1x ZP	✓						
39	0207_MW201-201023	"		✓				✓		"	✓						
40	0207_MW202-201023	"		✓			✓	✓		1x ZP, 1x P (x2 bottles)	✓	✓	✓	✓	✓		
41	0207_	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

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Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date: 23/10

Received by: Signed: Date:

Relinquished by: [redacted] Signed: Date:

Received by: [redacted] Signed: Date: 23/10/21

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AECOM — **Chain of Custody** — COC Page 4 of 4

AECOM Australia Pty Ltd Level 8, 540 Wickham Street Fortitude Valley, QLD, 4006 PO Box 1307 Fortitude Valley QLD 4006	Email reports to: [redacted]	**Laboratory Details** Lab. Name: Lab. Address: Contact Name: Lab. Ref:
		Tel: Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details:)	
6. Report Format: ESdat	7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2	HOLD	Notes
41	0207_QC317_201019	19/10		✓				✓		1x2P	✓						
42	0207_QC131_201019	"		✓				✓		"	✓						
43	0207_QC318-201020	20/10		✓				✓		"	✓						
44	0207_QC132-201020	"		✓				✓		"	✓						
45	0207_QC133_201020	"		✓				✓		"	✓						
46	0207_QC134_201020	"		✓				✓		"	✓						
47	0207_QC319_201021	21/10		✓				✓		"	✓						
48	0207_QC135_201021	"		✓				✓		"	✓						
49	0207_QC320_201022	22/10		✓				✓		"	✓						
50	0207_QC136_201022	"		✓				✓		"	✓						
51	0207_QC321_201023	23/10		✓				✓		"	✓						
	0207_																
	0207_																
	0207_																

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date: 23/10	Relinquished by: [redacted]	Signed:	Date:
Received by:	Signed:	Date:	Received by:	Signed:	Date: 23/10/19

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AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:

Project Name: QLD_0207_PFASOMP

AECOM Project #: 60612563 2.1

Purchase Order No:

Environmental Division Brisbane
Work Order Reference
EB2027826

[redacted]

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2			HOLD	
	0207_MW056-201023	23/10		✓				✓		3x2P	\								LD+MS
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		
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	0207_																		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 23/10

Received by: Signed: Date:

Relinquished by: [redacted] Signed: Date:

Received by: [redacted] Signed: Date: 23/10/20

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AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:

Project Name: QLD_0207_PFASOMP

AECOM Project #: 60612563 2.1

Purchase Order No:

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Environmental Division Brisbane
Work Order Reference
EB2027828

[redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2				HOLD
	0207_MW022_201022	22/10		✓				✓		1x4P	✓								
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		
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Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 23/10

Received by: Signed: Date:

Relinquished by: Signed: Date:

Received by: [redacted] Signed: Date: 23/10/20

R65

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AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:

Project Name: QLD_0207_PFASOMP

AECOM Project #: 60612563 2.1

Purchase Order No:

Environmental Division Brisbane
Work Order Reference
EB2027831

[redacted]

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)		EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2			HOLD	
	0207_MW297_201022	22/10		✓				✓		3x2P	\									LD+MS
	0207_																			
	0207_																			
	0207_																			
	0207_																			
	0207_																			
	0207_																			
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Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 23/10

Received by: Signed: Date:

Relinquished by: Signed: Date:

Received by: [redacted] Signed: Date: 23/10/2020 12:45

2910

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd Level 8, 540 Wickham Street Fortitude Valley, QLD, 4006 PO Box 1307 Fortitude Valley QLD 4006	**Laboratory Details** Lab. Name: Lab. Address: Contact Name: Lab. Ref:
Email reports to: [redacted]	Tel: Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Environmental Division Brisbane
Work Order Reference
EB2027833

[redacted]

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: fil'ed	acid	ice	other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2			HOLD
	0207_MW291-201022	22/10		✓				✓		1x2P	\							
	0207_																	
	0207_																	
	0207_																	
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Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

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Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date: 23/10	Relinquished by:
Received by:	Signed:	Date:	Received by: [redacted]

Signed: Date:

Signed: Date: 23/10/2020 12:46

29/10

AECOM

Chain of Custody

COC
Page 1 of 1

AECOM Australia Pty Ltd	**Laboratory Details**	Tel:
Level 8, 540 Wickham Street	Lab. Name:	Fax:
Fortitude Valley, QLD, 4006	Lab. Address:	Preliminary Report by:
PO Box 1307 Fortitude Valley QLD 4006	Contact Name:	Final Report by:
Email reports to: [redacted]	Lab. Ref:	Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Environmental Division Brisbane
Work Order Reference
EB2027835

[redacted]

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2			HOLD	
	0207_MW003_201021	21/10		✓				✓		3x2P									LD+MS
	0207_																		
	0207_																		
	0207_																		
	0207_																		
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Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date: 23/10	Relinquished by: [redacted]	Signed:	Date:
Received by:	Signed:	Date:	Received by: [redacted]	Signed:	Date: 23/10/20

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AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Environmental Division Brisbane
Work Order Reference
EB2027838

[redacted]

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: James Peachey

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analys: EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2			HOLD
1	0207_MW295_201021	21/10		✓				✓		3x2P	✓							LD + MS
2	0207_MW269_201021	11		✓			✓	✓		1x2P, 1x1P (1x1M)	✓	✓	✓	✓				
	0207_																	
	0207_																	
	0207_																	
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Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date: 23/10

Received by: Signed: Date:

Relinquished by: [redacted] Signed: Date:

Received by: [redacted] Signed: Date: 23/10/20

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AECOM

Chain of Custody

COC Page of

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Environmental Division Brisbane
Work Order Reference
EB2027840

[redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2	HOLD
	0207_MW151_201021	21/10		✓				✓		1x ZP	\					
	0207_															
	0207_															
	0207_															
	0207_															
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Report & invoice: [redacted]

Lab Report No. Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 23/10

Received by: Signed: Date:

Relinquished by: [redacted] Signed: Date:

Received by: [redacted] Signed: Date: 23/10/20

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AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Environmental Division Brisbane
Work Order Reference
EB2027841

[redacted]

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2			HOLD
	0207_MW147-201021	21/10		✓				✓		1x28	\							
	0207_																	
	0207_																	
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Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 23/10

Received by: Signed: Date:

Relinquished by: [redacted] Signed: Date:

Received by: [redacted] Signed: Date: 23/10/21

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AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Environmental Division Brisbane
Work Order Reference
EB2027842

[redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2	HOLD
	0207_MW134-201021	21/10		✓				✓		1x2P	✓					
	0207_															
	0207_															
	0207_															
	0207_															
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Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Eskey ID

Relinquished by:	[redacted]	Signed:	[redacted]	Date: 23/10	Relinquished by:	[redacted]	Signed: Date:
Received by:		Signed:		Date:	Received by:		Signed: Date: 23/10/20

12-45

29/10

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Environmental Division Brisbane
Work Order Reference
EB2027843

[redacted]

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2	HOLD	
	0207_MW038_201021	21/10		✓				✓		3x4	✓						LD + MS
	0207_																
	0207_																
	0207_																
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Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date: 23/10

Received by: Signed: Date:

Relinquished by: [redacted] Signed: Date:

Received by: [redacted] Signed: Date: 23/10/2020

12:45

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AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd	**Laboratory Details**	Tel:
Level 8, 540 Wickham Street	Lab. Name:	Fax:
Fortitude Valley, QLD, 4006	Lab. Address:	Preliminary Report by:
PO Box 1307 Fortitude Valley QLD 4006	Contact Name:	Final Report by:
Email reports to: [redacted]	Lab. Ref:	Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format — Yes (tick)

1. Urgent TAT required? (please circle: 24hr 48hr 5 days)
2. Fast TAT Guarantee Required?
3. Is any sediment layer present in waters to be excluded from extractions?
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?
5. Special storage requirements? (details: _____)
6. Report Format: ESdat
7. Project Manager: James Peachey

Analysis Request

Environmental Division Brisbane
Work Order Reference
EB2027844

[redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2				HOLD
	0207_MW019-201021	21/10		✓				✓		1x28									
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		
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	0207_																		
	0207_																		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted]	Signed:	Date: 23/10	Relinquished by: [redacted]	Signed:	Date:
Received by:	Signed:	Date:	Received by:	Signed:	Date: 23/10/20

1245

Please forward to NMI with the COC.

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name: AECOO6 | 201027
Lab. Address:
Contact Name:
Lab. Ref: Due: 3/11/20 AO

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat — 7. Project Manager: James Peachey

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2			HOLD	Notes
N20/025335	0207_QC231-201019	19/10		✓				✓		1x28	\								Forward to NMI
N20/025336	0207_QC232-201020	20/10		✓				✓		11	\								11
N20/025337	0207_QC233-201020	11		✓				✓		11	\								11
N20/025338	0207_QC234-201020	11		✓				✓		11	\								11
N20/025339	0207_QC235-201021	21/10		✓				✓		11	\								11
N20/025340	0207_QC236-201022	22/10		✓				✓		11	\								11
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		
	0207_																		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Eskey ID:

Relinquished by: [redacted] Date: 23/10

Received by: Signed: Date: 27/10/2020

Relinquished by: [redacted] Signed: Date:

Received by: [redacted] Signed: Date: 23/10/20

BY: AO 12:30 C LAB0000092134 12-65

26/10/2020

Appendix E

Laboratory Analytical Certificates and QA/QC Reports

Appendix E Laboratory Analytical Certificates and QA/QC Reports

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2027817**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: +[redacted]
Facsimile	: [redacted]	Facsimile	: +[redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 4
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 23-Oct-2020 12:45	Issue Date	: 23-Oct-2020
Client Requested Due Date	: 29-Oct-2020	Scheduled Reporting Date	: **29-Oct-2020**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 1.6°C, 1.3°C, 1.9°C - Ice present
Receipt Detail	: Medium hard esky	No. of samples received / analysed	: 51 / 51

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.
- 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.**
- **Samples "QC231" to "QC236" have been forwarded to NMI, 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.

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	Client sampling date / time	Client sample ID	WATER - EA025H Suspended Solids - Standard Level	WATER - EP002 Dissolved Organic Carbon (DOC)	WATER - EP231X PFAS - Full Suite (28 analytes)	WATER - NT-01 & 02A Ca, Mg, Na, K, Cl, SO4, Alkalinity & Fluoride
EB2027817-001	19-Oct-2020 00:00	0207_MW167_201019			✓	
EB2027817-002	19-Oct-2020 00:00	0207_MW178_201019			✓	
EB2027817-003	19-Oct-2020 00:00	0207_MW198_201019	✓	✓	✓	✓
EB2027817-004	19-Oct-2020 00:00	0207_MW206_201019			✓	
EB2027817-005	19-Oct-2020 00:00	0207_MW221_201019			✓	
EB2027817-006	19-Oct-2020 00:00	0207_MW223_201019	✓	✓	✓	✓
EB2027817-007	19-Oct-2020 00:00	0207_MW222_201019			✓	
EB2027817-008	19-Oct-2020 00:00	0207_MW230_201019			✓	
EB2027817-009	19-Oct-2020 00:00	0207_MW174_201020			✓	
EB2027817-010	20-Oct-2020 00:00	0207_MW172_201020	✓	✓	✓	✓
EB2027817-011	20-Oct-2020 00:00	0207_MW173_201020			✓	
EB2027817-012	20-Oct-2020 00:00	0207_MW254_201020			✓	
EB2027817-013	20-Oct-2020 00:00	0207_MW253_201020	✓	✓	✓	✓
EB2027817-014	20-Oct-2020 00:00	0207_MW249_201020			✓	
EB2027817-015	20-Oct-2020 00:00	0207_MW241_201020			✓	
EB2027817-016	20-Oct-2020 00:00	0207_MW235_201020			✓	
EB2027817-017	20-Oct-2020 00:00	0207_MW236_201020	✓	✓	✓	✓
EB2027817-018	20-Oct-2020 00:00	0207_MW232_201020	✓	✓	✓	✓
EB2027817-019	20-Oct-2020 00:00	0207_MW252_201020			✓	
EB2027817-020	20-Oct-2020 00:00	0207_MW300_201020			✓	
EB2027817-021	20-Oct-2020 00:00	0207_MW299_201020	✓	✓	✓	✓
EB2027817-022	20-Oct-2020 00:00	0207_MW245_201020			✓	
EB2027817-023	20-Oct-2020 00:00	0207_MW179_201020			✓	
EB2027817-024	20-Oct-2020 00:00	0207_MW193_201020			✓	
EB2027817-025	20-Oct-2020 00:00	0207_MW229_201020			✓	
EB2027817-026	20-Oct-2020 00:00	0207_MW189_201020			✓	
EB2027817-027	20-Oct-2020 00:00	0207_MW187_201020			✓	
EB2027817-028	21-Oct-2020 00:00	0207_MW255_201021	✓	✓	✓	✓
EB2027817-029	21-Oct-2020 00:00	0207_MW272_201021			✓	
EB2027817-030	21-Oct-2020 00:00	0207_MW233_201021			✓	
EB2027817-031	21-Oct-2020 00:00	0207_MW262_201021			✓	
EB2027817-032	21-Oct-2020 00:00	0207_MW257_201021			✓	
EB2027817-033	21-Oct-2020 00:00	0207_MW276_201021			✓	
EB2027817-034	22-Oct-2020 00:00	0207_MW203_201022			✓	
EB2027817-035	22-Oct-2020 00:00	0207_MW204_201022			✓	

			WATER - EA025H Suspended Solids - Standard Level	WATER - EP002 Dissolved Organic Carbon (DOC)	WATER - EP231X PFAS - Full Suite (28 analytes)	WATER - NT-01 & 02A Ca, Mg, Na, K, Cl, SO4, Alkalinity & Fluoride
EB2027817-036	22-Oct-2020 00:00	0207_MW205_201022			✓	
EB2027817-037	22-Oct-2020 00:00	0207_MW264_201022			✓	
EB2027817-038	23-Oct-2020 00:00	0207_MW242_201023			✓	
EB2027817-039	23-Oct-2020 00:00	0207_MW201_201023			✓	
EB2027817-040	23-Oct-2020 00:00	0207_MW202_201023	✓	✓	✓	✓
EB2027817-041	19-Oct-2020 00:00	0207_QC317_201019			✓	
EB2027817-042	19-Oct-2020 00:00	0207_QC131_201019			✓	
EB2027817-043	20-Oct-2020 00:00	0207_QC318_201020			✓	
EB2027817-044	20-Oct-2020 00:00	0207_QC132_201020			✓	
EB2027817-045	20-Oct-2020 00:00	0207_QC133_201020			✓	
EB2027817-046	20-Oct-2020 00:00	0207_QC134_201020			✓	
EB2027817-047	21-Oct-2020 00:00	0207_QC319_201021			✓	
EB2027817-048	21-Oct-2020 00:00	0207_QC135_201021			✓	
EB2027817-049	22-Oct-2020 00:00	0207_QC320_201022			✓	
EB2027817-050	22-Oct-2020 00:00	0207_QC136_201022			✓	
EB2027817-051	23-Oct-2020 00:00	0207_QC321_201023			✓	

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]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
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- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
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- EDI Format - ESDAT (ESDAT) Email
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[redacted]

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- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2027817**	Page	: 1 of 48
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: +[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020 12:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 24-Oct-2020
C-O-C number	: ----	Issue Date	: 29-Oct-2020 17:17
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 51		
No. of samples analysed	: 51		

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. 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.

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.

Senior Organic Chemist	Brisbane Organics, Stafford, QLD
Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Senior Inorganic Chemist	Brisbane Organics, Stafford, QLD
Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
2IC 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 Contact 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.
- Ionic Balance out of acceptable limits for some samples due to analytes not quantified in this report.
- EP231X PFAS / EP231X-INJ PFAS Direct Injection: Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP231X-INJ PFAS by LCMSMS: Particular samples have been tested to the legacy QSM 5.1 aligned, NATA accredited method due to sample matrix being unsuitable for 125mL extraction (high sediment content).
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- 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.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW167_201019	0207_MW178_201019	0207_MW198_201019	0207_MW206_201019	0207_MW221_201019
				19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00
				EB2027817-001	EB2027817-002	EB2027817-003	EB2027817-004	EB2027817-005
				Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	----	----	8	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	----	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	----	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	----	875	----	----
Total Alkalinity as CaCO3	----	1	mg/L	----	----	875	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	501	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	----	434	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	----	70	----	----
Magnesium	7439-95-4	1	mg/L	----	----	92	----	----
Sodium	7440-23-5	1	mg/L	----	----	664	----	----
Potassium	7440-09-7	1	mg/L	----	----	2	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	----	40.2	----	----
ø Total Cations	----	0.01	meq/L	----	----	40.0	----	----
ø Ionic Balance	----	0.01	%	----	----	0.20	----	----
EP002: Dissolved Organic Carbon (DOC)								
Dissolved Organic Carbon	----	1	mg/L	----	----	7	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.85	----	----	----	0.40
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.70	----	----	----	0.40
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	3.68	----	----	----	2.16
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.38	----	----	----	0.19
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	8.45	----	----	----	2.73
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW167_201019	0207_MW178_201019	0207_MW198_201019	0207_MW206_201019	0207_MW221_201019
				19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00
				EB2027817-001	EB2027817-002	EB2027817-003	EB2027817-004	EB2027817-005
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	<0.02	**0.60**	**0.78**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	<0.02	**0.66**	**0.75**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	<0.02	**4.51**	**5.60**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	<0.02	**0.60**	**0.38**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	<0.01	**14.0**	**5.27**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.02	<0.04	<0.04	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L	**0.28**	----	----	----	**0.18**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.40**	----	----	----	**0.30**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**1.74**	----	----	----	**1.04**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.28**	----	----	----	**0.28**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.52**	----	----	----	**0.42**
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
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	<0.1	**0.5**	<0.2	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	<0.02	**0.82**	**0.35**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	<0.02	**1.89**	**1.43**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	<0.02	**0.51**	**0.36**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	<0.01	**0.86**	**0.61**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	<0.02	<0.04	<0.04	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	<0.02	<0.04	<0.04	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW167_201019	0207_MW178_201019	0207_MW198_201019	0207_MW206_201019	0207_MW221_201019
				19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00
				EB2027817-001	EB2027817-002	EB2027817-003	EB2027817-004	EB2027817-005
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	<0.02	<0.04	<0.04	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	<0.02	<0.04	<0.04	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	<0.02	<0.04	<0.04	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	<0.05	<0.09	<0.10	----
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
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
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	<0.02	<0.04	<0.04	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	<0.05	<0.09	<0.10	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	<0.05	<0.09	<0.10	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	----	<0.05	<0.09	<0.10	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	<0.05	<0.09	<0.10	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW167_201019	0207_MW178_201019	0207_MW198_201019	0207_MW206_201019	0207_MW221_201019
				19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00
				EB2027817-001	EB2027817-002	EB2027817-003	EB2027817-004	EB2027817-005
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	<0.02	<0.04	<0.04	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	<0.02	<0.04	<0.04	----
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
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	**0.10**	<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	**17.3**	----	----	----	**8.10**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**12.1**	----	----	----	**4.89**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**16.2**	----	----	----	**7.51**
Sum of PFAS	----	0.01	µg/L	----	<0.01	**25.0**	**15.5**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	<0.01	**18.5**	**10.9**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	<0.01	**23.8**	**14.4**	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	----	**97.6**	**76.0**	**102**	----
13C4-PFOS	----	0.02	%	**90.5**	----	----	----	**95.1**
13C8-PFOA	----	0.02	%	----	**103**	**100**	**102**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW167_201019	0207_MW178_201019	0207_MW198_201019	0207_MW206_201019	0207_MW221_201019
				19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00
				EB2027817-001	EB2027817-002	EB2027817-003	EB2027817-004	EB2027817-005
				Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued								
13C8-PFOA	----	0.02	%	**102**	**----**	**----**	**----**	**101**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW223_201019	0207_MW222_201019	0207_MW230_201019	0207_MW174_201020	0207_MW172_201020
				19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-006	EB2027817-007	EB2027817-008	EB2027817-009	EB2027817-010
				Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	159	----	----	----	162
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	425	----	----	----	270
Total Alkalinity as CaCO3	----	1	mg/L	425	----	----	----	270
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	72	----	----	----	14
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	419	----	----	----	344
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	89	----	----	----	65
Magnesium	7439-95-4	1	mg/L	66	----	----	----	45
Sodium	7440-23-5	1	mg/L	276	----	----	----	185
Potassium	7440-09-7	1	mg/L	2	----	----	----	2
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	21.8	----	----	----	15.4
ø Total Cations	----	0.01	meq/L	21.9	----	----	----	15.0
ø Ionic Balance	----	0.01	%	0.27	----	----	----	1.13
EP002: Dissolved Organic Carbon (DOC)								
Dissolved Organic Carbon	----	1	mg/L	3	----	----	----	4
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	1.67	----	<0.60	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	1.95	----	0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	12.1	----	0.09	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	1.17	----	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	14.6	----	0.09	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.10	----	<0.02	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW223_201019	0207_MW222_201019	0207_MW230_201019	0207_MW174_201020	0207_MW172_201020
				19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-006	EB2027817-007	EB2027817-008	EB2027817-009	EB2027817-010
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**1.02**	----	**1.11**	----	**0.33**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**1.11**	----	**1.11**	----	**0.34**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	**8.66**	----	**6.72**	----	**2.05**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.80**	----	**0.77**	----	**0.15**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**15.0**	----	**8.61**	----	**3.96**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.04	----	<0.04	----	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L	----	**1.40**	----	<0.20	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	**4.71**	----	**0.16**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	**8.54**	----	**0.09**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	**3.76**	----	**0.06**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	**5.28**	----	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	**0.86**	----	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	<0.10	----	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	<0.10	----	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	<0.10	----	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	<0.10	----	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	<0.25	----	<0.05	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**5.8**	----	**5.0**	----	**0.5**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**28.7**	----	**22.9**	----	**1.47**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**13.3**	----	**11.9**	----	**1.36**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**7.69**	----	**6.27**	----	**1.09**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**8.44**	----	**5.32**	----	**0.64**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	**2.14**	----	**0.65**	----	**0.14**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	**0.06**	----	<0.04	----	**0.07**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW223_201019	0207_MW222_201019	0207_MW230_201019	0207_MW174_201020	0207_MW172_201020
				19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-006	EB2027817-007	EB2027817-008	EB2027817-009	EB2027817-010
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.04	----	<0.04	----	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.04	----	<0.04	----	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.04	----	<0.04	----	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.10	----	<0.10	----	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	<0.10	----	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	<0.25	----	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	<0.25	----	<0.05	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	----	<0.25	----	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	<0.25	----	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	<0.10	----	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	<0.10	----	<0.02	----
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	**0.05**	----	<0.04	----	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.10	----	<0.10	----	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.10	----	<0.10	----	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.10	----	<0.10	----	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.10	----	<0.10	----	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW223_201019	0207_MW222_201019	0207_MW230_201019	0207_MW174_201020	0207_MW172_201020
				19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-006	EB2027817-007	EB2027817-008	EB2027817-009	EB2027817-010
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.04	----	<0.04	----	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.04	----	<0.04	----	<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	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	**6.40**	----	**0.94**	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	**0.10**	----	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.10	----	<0.05	----
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	**5.00**	----	**2.36**	----	**0.86**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	**0.61**	----	<0.05	----	**1.42**
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	----	**62.5**	----	**1.45**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	**26.7**	----	**0.18**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	**58.6**	----	**1.43**	----
Sum of PFAS	----	0.01	µg/L	**98.4**	----	**72.7**	----	**14.4**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**23.7**	----	**15.3**	----	**6.01**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**94.2**	----	**70.2**	----	**13.7**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**106**	----	**102**	----	**97.8**
13C4-PFOS	----	0.02	%	----	**96.8**	----	**97.8**	----
13C8-PFOA	----	0.02	%	**101**	----	**100**	----	**101**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW223_201019	0207_MW222_201019	0207_MW230_201019	0207_MW174_201020	0207_MW172_201020
				19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	19-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-006	EB2027817-007	EB2027817-008	EB2027817-009	EB2027817-010
				Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued								
13C8-PFOA	----	0.02	%	**----**	**103**	**----**	**100**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW173_201020	0207_MW254_201020	0207_MW253_201020	0207_MW249_201020	0207_MW241_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-011	EB2027817-012	EB2027817-013	EB2027817-014	EB2027817-015
				Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	----	----	116	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	----	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	----	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	----	388	----	----
Total Alkalinity as CaCO3	----	1	mg/L	----	----	388	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	8	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	----	545	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	----	103	----	----
Magnesium	7439-95-4	1	mg/L	----	----	70	----	----
Sodium	7440-23-5	1	mg/L	----	----	274	----	----
Potassium	7440-09-7	1	mg/L	----	----	3	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	----	23.3	----	----
ø Total Cations	----	0.01	meq/L	----	----	22.9	----	----
ø Ionic Balance	----	0.01	%	----	----	0.86	----	----
EP002: Dissolved Organic Carbon (DOC)								
Dissolved Organic Carbon	----	1	mg/L	----	----	6	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	1.82	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	1.62	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	11.2	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	0.27	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	11.4	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.10	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW173_201020	0207_MW254_201020	0207_MW253_201020	0207_MW249_201020	0207_MW241_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-011	EB2027817-012	EB2027817-013	EB2027817-014	EB2027817-015
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.29**	----	**1.75**	**0.82**	**0.17**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.29**	----	**1.97**	**0.93**	**0.16**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	**2.67**	----	**13.7**	**3.95**	**1.42**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.18**	----	**0.94**	**0.05**	**0.09**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**2.27**	----	**18.4**	**0.13**	**2.64**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	<0.04	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L	----	**0.58**	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	**1.08**	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	**3.93**	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	**0.33**	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	**0.65**	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	<0.10	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	<0.10	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	<0.10	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	<0.10	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	<0.10	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	<0.25	----	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**0.3**	----	**0.6**	**0.2**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.97**	----	**0.72**	**0.41**	**0.08**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**1.28**	----	**2.71**	**1.62**	**0.24**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.58**	----	**0.34**	**0.17**	**0.06**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.56**	----	**0.88**	**0.10**	**0.13**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	**0.12**	----	<0.04	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	<0.04	<0.02	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW173_201020	0207_MW254_201020	0207_MW253_201020	0207_MW249_201020	0207_MW241_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-011	EB2027817-012	EB2027817-013	EB2027817-014	EB2027817-015
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	<0.04	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	<0.04	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	<0.04	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	<0.09	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	**0.13**	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	<0.25	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	<0.25	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	----	<0.25	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	<0.25	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	<0.10	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	<0.10	----	----	----
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	**0.12**	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	<0.09	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	<0.09	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	----	<0.09	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	----	<0.09	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW173_201020	0207_MW254_201020	0207_MW253_201020	0207_MW249_201020	0207_MW241_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-011	EB2027817-012	EB2027817-013	EB2027817-014	EB2027817-015
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	----	<0.04	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	----	<0.04	<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	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.10	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.10	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.10	----	----	----
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	**0.54**	----	<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	----	**33.0**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	**22.6**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	**31.0**	----	----	----
Sum of PFAS	----	0.01	µg/L	**10.0**	----	**42.1**	**8.38**	**4.99**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**4.94**	----	**32.1**	**4.08**	**4.06**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**9.46**	----	**39.1**	**7.40**	**4.74**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**97.5**	----	**95.0**	**98.3**	**95.6**
13C4-PFOS	----	0.02	%	----	**95.9**	----	----	----
13C8-PFOA	----	0.02	%	**99.7**	----	**100**	**99.2**	**99.1**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW173_201020	0207_MW254_201020	0207_MW253_201020	0207_MW249_201020	0207_MW241_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-011	EB2027817-012	EB2027817-013	EB2027817-014	EB2027817-015
				Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued								
13C8-PFOA	----	0.02	%	**----**	**101**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW235_201020	0207_MW236_201020	0207_MW232_201020	0207_MW252_201020	0207_MW300_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-016	EB2027817-017	EB2027817-018	EB2027817-019	EB2027817-020
				Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	----	**9150**	**6**	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	**318**	**105**	----	----
Total Alkalinity as CaCO3	----	1	mg/L	----	**318**	**105**	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	**11**	**4**	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	**462**	**15**	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	**108**	**14**	----	----
Magnesium	7439-95-4	1	mg/L	----	**74**	**12**	----	----
Sodium	7440-23-5	1	mg/L	----	**177**	**31**	----	----
Potassium	7440-09-7	1	mg/L	----	**4**	<1	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	**19.6**	**2.60**	----	----
ø Total Cations	----	0.01	meq/L	----	**19.3**	**3.03**	----	----
ø Ionic Balance	----	0.01	%	----	**0.86**	----	----	----
EP002: Dissolved Organic Carbon (DOC)								
Dissolved Organic Carbon	----	1	mg/L	----	**5**	**6**	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	**3.43**	----	**1.16**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	**2.30**	----	**1.12**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	**8.96**	----	**6.55**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	**0.56**	----	**0.46**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	**6.29**	----	**16.3**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.02	----	<0.10	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW235_201020	0207_MW236_201020	0207_MW232_201020	0207_MW252_201020	0207_MW300_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-016	EB2027817-017	EB2027817-018	EB2027817-019	EB2027817-020
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**4.86**	----	**0.23**	----	**11.2**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**4.77**	----	**0.32**	----	**11.9**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	**13.7**	----	**2.82**	----	**48.2**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.28**	----	**0.28**	----	**3.98**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**4.38**	----	**14.3**	----	**45.6**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.04	----	<0.04	----	<0.18
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L	----	**1.21**	----	<0.50	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	**1.15**	----	**0.65**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	**5.06**	----	**1.55**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	**0.49**	----	**0.38**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	**0.89**	----	**0.68**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	<0.02	----	<0.10	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	<0.02	----	<0.10	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	<0.02	----	<0.10	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	<0.02	----	<0.10	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	<0.02	----	<0.10	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	<0.05	----	<0.25	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**1.4**	----	**0.8**	----	**3.4**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**1.97**	----	**2.31**	----	**5.16**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**9.48**	----	**1.56**	----	**24.1**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.67**	----	**1.08**	----	**4.87**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.54**	----	**1.16**	----	**8.02**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.04	----	**0.38**	----	<0.18
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.04	----	**0.45**	----	<0.18

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW235_201020	0207_MW236_201020	0207_MW232_201020	0207_MW252_201020	0207_MW300_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-016	EB2027817-017	EB2027817-018	EB2027817-019	EB2027817-020
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.04	----	<0.04	----	<0.18
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.04	----	<0.04	----	<0.18
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.04	----	<0.04	----	<0.18
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.10	----	<0.09	----	<0.44
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	<0.02	----	<0.10	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	<0.05	----	<0.25	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	<0.05	----	<0.25	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	----	<0.05	----	<0.25	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	<0.05	----	<0.25	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	<0.02	----	<0.10	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	<0.02	----	<0.10	----
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.04	----	**0.04**	----	<0.18
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.10	----	<0.09	----	<0.44
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.10	----	<0.09	----	<0.44
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.10	----	<0.09	----	<0.44
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.10	----	<0.09	----	<0.44

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW235_201020	0207_MW236_201020	0207_MW232_201020	0207_MW252_201020	0207_MW300_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-016	EB2027817-017	EB2027817-018	EB2027817-019	EB2027817-020
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.04	----	<0.04	----	<0.18
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.04	----	<0.04	----	<0.18
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	<0.05	----	<0.10	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.05	----	<0.10	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	----	<0.10	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	----	<0.10	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	<0.05	----	<0.18
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	**0.18**	----	<0.18
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	**1.78**	----	<0.18
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	<0.05	----	<0.18
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	----	**30.3**	----	**28.8**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	**15.2**	----	**22.8**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	**27.5**	----	**27.3**	----
Sum of PFAS	----	0.01	µg/L	**42.0**	----	**27.7**	----	**166**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**18.1**	----	**17.1**	----	**93.8**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**37.0**	----	**26.2**	----	**150**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**118**	----	**77.0**	----	**95.0**
13C4-PFOS	----	0.02	%	----	**101**	----	**139**	----
13C8-PFOA	----	0.02	%	**102**	----	**93.0**	----	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW235_201020	0207_MW236_201020	0207_MW232_201020	0207_MW252_201020	0207_MW300_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-016	EB2027817-017	EB2027817-018	EB2027817-019	EB2027817-020
				Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued								
13C8-PFOA	----	0.02	%	**----**	**99.2**	**----**	**127**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW299_201020	0207_MW245_201020	0207_MW179_201020	0207_MW193_201020	0207_MW229_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-021	EB2027817-022	EB2027817-023	EB2027817-024	EB2027817-025
				Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	30	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	710	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	710	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	35	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	2340	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	300	----	----	----	----
Magnesium	7439-95-4	1	mg/L	264	----	----	----	----
Sodium	7440-23-5	1	mg/L	961	----	----	----	----
Potassium	7440-09-7	1	mg/L	5	----	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	80.9	----	----	----	----
ø Total Cations	----	0.01	meq/L	78.6	----	----	----	----
ø Ionic Balance	----	0.01	%	1.44	----	----	----	----
EP002: Dissolved Organic Carbon (DOC)								
Dissolved Organic Carbon	----	1	mg/L	10	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	4.27	0.04	0.52	3.20	0.60
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	4.66	0.04	0.43	3.48	0.84
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	17.5	0.22	2.30	17.1	6.40
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.84	<0.02	0.23	1.68	0.46
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	8.94	0.13	3.01	17.3	19.9
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.07	<0.02	<0.02	<0.07	<0.07

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW299_201020	0207_MW245_201020	0207_MW179_201020	0207_MW193_201020	0207_MW229_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-021	EB2027817-022	EB2027817-023	EB2027817-024	EB2027817-025
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**1.5**	<0.1	**0.2**	**3.9**	<0.4
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**2.28**	<0.02	**0.29**	**2.31**	**0.26**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**10.7**	**0.06**	**1.47**	**9.39**	**1.62**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**2.04**	<0.02	**0.23**	**2.42**	**0.16**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**3.10**	**0.01**	**0.35**	**3.54**	**0.43**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.07	<0.02	<0.02	<0.07	<0.07
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.07	<0.02	<0.02	<0.07	<0.07
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.07	<0.02	<0.02	<0.07	<0.07
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.07	<0.02	<0.02	<0.07	<0.07
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.07	<0.02	<0.02	<0.07	<0.07
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.18	<0.05	<0.05	<0.18	<0.18
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.07	<0.02	<0.02	<0.07	<0.07
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.18	<0.05	<0.05	<0.18	<0.18
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.18	<0.05	<0.05	<0.18	<0.18
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.18	<0.05	<0.05	<0.18	<0.18
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.18	<0.05	<0.05	<0.18	<0.18
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.07	<0.02	<0.02	<0.07	<0.07
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.07	<0.02	<0.02	<0.07	<0.07
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.07	<0.05	<0.05	<0.07	<0.07

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW299_201020	0207_MW245_201020	0207_MW179_201020	0207_MW193_201020	0207_MW229_201020
				20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-021	EB2027817-022	EB2027817-023	EB2027817-024	EB2027817-025
				Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.07	<0.05	<0.05	**0.13**	<0.07
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.07	<0.05	<0.05	<0.07	<0.07
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.07	<0.05	<0.05	<0.07	<0.07
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**55.8**	**0.50**	**9.03**	**64.4**	**30.7**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**26.4**	**0.35**	**5.31**	**34.4**	**26.3**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**50.3**	**0.46**	**8.37**	**59.3**	**29.4**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**88.0**	**97.1**	**89.7**	**74.0**	**78.0**
13C8-PFOA	----	0.02	%	**88.0**	**97.0**	**96.9**	**90.0**	**86.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW189_201020	0207_MW187_201020	0207_MW255_201021	0207_MW272_201021	0207_MW233_201021
				20-Oct-2020 00:00	20-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00
				EB2027817-026	EB2027817-027	EB2027817-028	EB2027817-029	EB2027817-030
				Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	----	----	62	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	----	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	----	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	----	174	----	----
Total Alkalinity as CaCO3	----	1	mg/L	----	----	174	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	29	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	----	754	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	----	124	----	----
Magnesium	7439-95-4	1	mg/L	----	----	56	----	----
Sodium	7440-23-5	1	mg/L	----	----	326	----	----
Potassium	7440-09-7	1	mg/L	----	----	3	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	----	25.3	----	----
ø Total Cations	----	0.01	meq/L	----	----	25.0	----	----
ø Ionic Balance	----	0.01	%	----	----	0.59	----	----
EP002: Dissolved Organic Carbon (DOC)								
Dissolved Organic Carbon	----	1	mg/L	----	----	<1	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	----	0.21
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	----	----	0.18
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	----	----	1.00
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	----	----	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	----	0.27
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	----	----	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW189_201020	0207_MW187_201020	0207_MW255_201021	0207_MW272_201021	0207_MW233_201021
				20-Oct-2020 00:00	20-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00
				EB2027817-026	EB2027817-027	EB2027817-028	EB2027817-029	EB2027817-030
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**0.06**	<0.02	**0.07**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	**0.08**	**0.02**	**0.07**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	**0.08**	**0.60**	**0.12**	**0.44**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	**0.03**	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.12**	**0.34**	**0.07**	**0.21**	----
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	0.10	µg/L	----	----	----	----	<0.10
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	----	<0.06
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	----	**0.19**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	----	**0.04**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	----	**0.05**
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
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	**0.11**	**0.02**	**0.10**	----
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	**0.03**	<0.01	**0.02**	----
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	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW189_201020	0207_MW187_201020	0207_MW255_201021	0207_MW272_201021	0207_MW233_201021
				20-Oct-2020 00:00	20-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00
				EB2027817-026	EB2027817-027	EB2027817-028	EB2027817-029	EB2027817-030
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
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
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
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
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	----
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	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW189_201020	0207_MW187_201020	0207_MW255_201021	0207_MW272_201021	0207_MW233_201021
				20-Oct-2020 00:00	20-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00
				EB2027817-026	EB2027817-027	EB2027817-028	EB2027817-029	EB2027817-030
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
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
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
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	----	----	----	----	**1.94**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	----	**1.27**
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	----	**1.76**
Sum of PFAS	----	0.01	µg/L	**0.20**	**1.27**	**0.23**	**0.93**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.20**	**0.94**	**0.19**	**0.65**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.20**	**1.16**	**0.21**	**0.86**	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**97.6**	**98.2**	**102**	**105**	----
13C4-PFOS	----	0.02	%	----	----	----	----	**92.8**
13C8-PFOA	----	0.02	%	**102**	**98.6**	**100**	**102**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW189_201020	0207_MW187_201020	0207_MW255_201021	0207_MW272_201021	0207_MW233_201021
				20-Oct-2020 00:00	20-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00
				EB2027817-026	EB2027817-027	EB2027817-028	EB2027817-029	EB2027817-030
				Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued								
13C8-PFOA	----	0.02	%	**----**	**----**	**----**	**----**	**101**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW262_201021	0207_MW257_201021	0207_MW276_201021	0207_MW203_201022	0207_MW204_201022
				21-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00	22-Oct-2020 00:00	22-Oct-2020 00:00
				EB2027817-031	EB2027817-032	EB2027817-033	EB2027817-034	EB2027817-035
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	**0.96**	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	**1.16**	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	**8.90**	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	**0.63**	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	**10.9**	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	<0.02	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.07**	<0.02	----	**1.59**	**13.6**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.02**	<0.02	----	**1.82**	**16.2**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	**0.13**	**0.03**	----	**11.2**	**101**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	----	**0.62**	**4.67**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.06**	**0.03**	----	**4.71**	**25.3**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	----	<0.04	<0.20
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L	----	----	**0.35**	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	**0.38**	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	**1.78**	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	**0.29**	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	**0.56**	----	----
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	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW262_201021	0207_MW257_201021	0207_MW276_201021	0207_MW203_201022	0207_MW204_201022
				21-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00	22-Oct-2020 00:00	22-Oct-2020 00:00
				EB2027817-031	EB2027817-032	EB2027817-033	EB2027817-034	EB2027817-035
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	<0.05	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	**0.3**	**1.5**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	**0.62**	**4.67**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.03**	<0.02	----	**3.15**	**21.8**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	**0.56**	**3.93**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.01**	<0.01	----	**0.89**	**6.12**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	----	<0.04	<0.20
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	----	<0.04	<0.20
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	----	<0.04	<0.20
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	----	<0.04	<0.20
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	----	<0.04	<0.20
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	----	<0.10	<0.50
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	----	----
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	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW262_201021	0207_MW257_201021	0207_MW276_201021	0207_MW203_201022	0207_MW204_201022
				21-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00	22-Oct-2020 00:00	22-Oct-2020 00:00
				EB2027817-031	EB2027817-032	EB2027817-033	EB2027817-034	EB2027817-035
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	----	<0.04	<0.20
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	----	<0.10	<0.50
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	----	<0.10	<0.50
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	----	<0.10	<0.50
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	----	<0.10	<0.50
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	----	<0.04	<0.20
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	----	<0.04	<0.20
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	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	<0.05	<0.20
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	<0.05	**0.22**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	<0.05	<0.20
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	<0.05	<0.20
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	----	----	**25.9**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW262_201021	0207_MW257_201021	0207_MW276_201021	0207_MW203_201022	0207_MW204_201022
				21-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00	22-Oct-2020 00:00	22-Oct-2020 00:00
				EB2027817-031	EB2027817-032	EB2027817-033	EB2027817-034	EB2027817-035
				Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**----**	**----**	**19.8**	**----**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**----**	**----**	**24.1**	**----**	**----**
Sum of PFAS	----	0.01	µg/L	**0.32**	**0.06**	**----**	**25.5**	**199**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.19**	**0.06**	**----**	**15.9**	**126**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.30**	**0.06**	**----**	**23.0**	**178**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**82.0**	**87.7**	**----**	**76.0**	**90.0**
13C4-PFOS	----	0.02	%	**----**	**----**	**99.3**	**----**	**----**
13C8-PFOA	----	0.02	%	**97.2**	**94.2**	**----**	**94.0**	**100**
13C8-PFOA	----	0.02	%	**----**	**----**	**100**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW205_201022	0207_MW264_201022	0207_MW242_201023	0207_MW201_201023	0207_MW202_201023
				22-Oct-2020 00:00	22-Oct-2020 00:00	23-Oct-2020 00:00	23-Oct-2020 00:00	23-Oct-2020 00:00
				EB2027817-036	EB2027817-037	EB2027817-038	EB2027817-039	EB2027817-040
				Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	----	----	----	----	96
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	----	----	----	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	----	----	----	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	----	----	----	786
Total Alkalinity as CaCO3	----	1	mg/L	----	----	----	----	786
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	----	----	105
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	----	----	----	408
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	----	----	----	47
Magnesium	7439-95-4	1	mg/L	----	----	----	----	62
Sodium	7440-23-5	1	mg/L	----	----	----	----	504
Potassium	7440-09-7	1	mg/L	----	----	----	----	2
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	----	----	----	29.4
ø Total Cations	----	0.01	meq/L	----	----	----	----	29.4
ø Ionic Balance	----	0.01	%	----	----	----	----	0.04
EP002: Dissolved Organic Carbon (DOC)								
Dissolved Organic Carbon	----	1	mg/L	----	----	----	----	12
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	0.02	µg/L	----	<0.02	----	----	----
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	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW205_201022	0207_MW264_201022	0207_MW242_201023	0207_MW201_201023	0207_MW202_201023
				22-Oct-2020 00:00	22-Oct-2020 00:00	23-Oct-2020 00:00	23-Oct-2020 00:00	23-Oct-2020 00:00
				EB2027817-036	EB2027817-037	EB2027817-038	EB2027817-039	EB2027817-040
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**1.41**	----	**0.03**	**10.2**	**7.78**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**1.50**	----	<0.02	**10.8**	**9.30**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	**8.79**	----	**0.12**	**69.0**	**80.3**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.52**	----	<0.02	**4.06**	**8.62**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**5.72**	----	**0.21**	**36.2**	**282**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.04	----	<0.02	<0.19	<0.40
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L	----	<0.10	----	----	----
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	----	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.2	----	<0.1	<0.9	<2.0
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.51**	----	<0.02	**3.44**	**4.15**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**2.38**	----	**0.03**	**16.0**	**16.5**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.40**	----	<0.02	**2.29**	**2.48**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.62**	----	**0.01**	**4.36**	**6.87**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.04	----	<0.02	<0.19	<0.40
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.04	----	<0.02	<0.19	<0.40

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW205_201022	0207_MW264_201022	0207_MW242_201023	0207_MW201_201023	0207_MW202_201023
				22-Oct-2020 00:00	22-Oct-2020 00:00	23-Oct-2020 00:00	23-Oct-2020 00:00	23-Oct-2020 00:00
				EB2027817-036	EB2027817-037	EB2027817-038	EB2027817-039	EB2027817-040
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.04	----	<0.02	<0.19	<0.40
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.04	----	<0.02	<0.19	<0.40
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.04	----	<0.02	<0.19	<0.40
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.10	----	<0.05	<0.47	<1.00
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	----	----	----
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	----	----	----
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.04	----	<0.02	<0.19	<0.40
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.10	----	<0.05	<0.47	<1.00
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.10	----	<0.05	<0.47	<1.00
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.10	----	<0.05	<0.47	<1.00
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.10	----	<0.05	<0.47	<1.00

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW205_201022	0207_MW264_201022	0207_MW242_201023	0207_MW201_201023	0207_MW202_201023
				22-Oct-2020 00:00	22-Oct-2020 00:00	23-Oct-2020 00:00	23-Oct-2020 00:00	23-Oct-2020 00:00
				EB2027817-036	EB2027817-037	EB2027817-038	EB2027817-039	EB2027817-040
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.04	----	<0.02	<0.19	<0.40
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.04	----	<0.02	<0.19	<0.40
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	----	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	<0.05	<0.19	<0.40
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	**0.10**	**0.41**	**0.84**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	<0.05	<0.19	<0.40
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	<0.05	<0.19	<0.40
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	----	----	----
Sum of PFAS	----	0.01	µg/L	**21.8**	----	**0.50**	**157**	**419**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**14.5**	----	**0.33**	**105**	**362**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**19.8**	----	**0.50**	**142**	**401**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**112**	----	**96.8**	**115**	**110**
13C4-PFOS	----	0.02	%	----	**97.5**	----	----	----
13C8-PFOA	----	0.02	%	**100**	----	**101**	**95.0**	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW205_201022	0207_MW264_201022	0207_MW242_201023	0207_MW201_201023	0207_MW202_201023
				22-Oct-2020 00:00	22-Oct-2020 00:00	23-Oct-2020 00:00	23-Oct-2020 00:00	23-Oct-2020 00:00
				EB2027817-036	EB2027817-037	EB2027817-038	EB2027817-039	EB2027817-040
				Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued								
13C8-PFOA	----	0.02	%	**----**	**100**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_QC317_201019	0207_QC131_201019	0207_QC318_201020	0207_QC132_201020	0207_QC133_201020
				19-Oct-2020 00:00	19-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-041	EB2027817-042	EB2027817-043	EB2027817-044	EB2027817-045
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	**0.32**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	----	**0.31**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	----	**2.90**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	----	**0.17**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	**1.85**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	----	<0.02	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	----	**0.04**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	----	**0.04**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	<0.02	----	**0.23**
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	<0.01	----	**0.13**
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	0.10	µg/L	----	----	----	<0.35	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	<0.98	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	**1.22**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	**0.61**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	**0.57**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	----	**0.12**	----
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	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_QC317_201019	0207_QC131_201019	0207_QC318_201020	0207_QC132_201020	0207_QC133_201020
				19-Oct-2020 00:00	19-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-041	EB2027817-042	EB2027817-043	EB2027817-044	EB2027817-045
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	----	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	----	<0.05	----
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	----	**0.06**
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	----
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	----
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	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_QC317_201019	0207_QC131_201019	0207_QC318_201020	0207_QC132_201020	0207_QC133_201020
				19-Oct-2020 00:00	19-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-041	EB2027817-042	EB2027817-043	EB2027817-044	EB2027817-045
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
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
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	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	**0.42**	----
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	----
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	----	----	----	**8.49**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_QC317_201019	0207_QC131_201019	0207_QC318_201020	0207_QC132_201020	0207_QC133_201020
				19-Oct-2020 00:00	19-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00	20-Oct-2020 00:00
				EB2027817-041	EB2027817-042	EB2027817-043	EB2027817-044	EB2027817-045
				Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**----**	**----**	**----**	**4.75**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**----**	**----**	**----**	**7.89**	**----**
Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	<0.01	**----**	**0.51**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	**----**	**0.36**
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<0.01	**----**	**0.47**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**93.8**	**111**	**82.3**	**----**	**104**
13C4-PFOS	----	0.02	%	**----**	**----**	**----**	**88.5**	**----**
13C8-PFOA	----	0.02	%	**99.6**	**101**	**98.9**	**----**	**99.2**
13C8-PFOA	----	0.02	%	**----**	**----**	**----**	**96.2**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_QC134_201020	0207_QC319_201021	0207_QC135_201021	0207_QC320_201022	0207_QC136_201022
				20-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00	22-Oct-2020 00:00	22-Oct-2020 00:00
				EB2027817-046	EB2027817-047	EB2027817-048	EB2027817-049	EB2027817-050
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**3.36**	<0.02	**0.07**	<0.02	**1.67**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**3.64**	<0.02	**0.08**	<0.02	**1.87**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	**17.3**	<0.02	**0.46**	<0.02	**11.5**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**1.85**	<0.02	<0.02	<0.02	**0.69**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**21.5**	<0.01	**0.19**	<0.01	**5.81**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.04	<0.02	<0.02	<0.02	<0.04
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**1.9**	<0.1	<0.1	<0.1	<0.2
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**2.30**	<0.02	**0.02**	<0.02	**0.68**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**9.80**	<0.02	**0.11**	<0.02	**3.34**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**2.46**	<0.02	<0.02	<0.02	**0.56**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**3.74**	<0.01	**0.02**	<0.01	**0.96**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	**0.05**	<0.02	<0.02	<0.02	<0.04
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.04	<0.02	<0.02	<0.02	<0.04
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.04	<0.02	<0.02	<0.02	<0.04
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.04	<0.02	<0.02	<0.02	<0.04
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.04	<0.02	<0.02	<0.02	<0.04
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.10	<0.05	<0.05	<0.05	<0.09
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.04	<0.02	<0.02	<0.02	<0.04
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.10	<0.05	<0.05	<0.05	<0.09
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.10	<0.05	<0.05	<0.05	<0.09

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_QC134_201020	0207_QC319_201021	0207_QC135_201021	0207_QC320_201022	0207_QC136_201022
				20-Oct-2020 00:00	21-Oct-2020 00:00	21-Oct-2020 00:00	22-Oct-2020 00:00	22-Oct-2020 00:00
				EB2027817-046	EB2027817-047	EB2027817-048	EB2027817-049	EB2027817-050
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.10	<0.05	<0.05	<0.05	<0.09
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.10	<0.05	<0.05	<0.05	<0.09
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.04	<0.02	<0.02	<0.02	<0.04
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.04	<0.02	<0.02	<0.02	<0.04
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	**0.14**	<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	**68.0**	<0.01	**0.95**	<0.01	**27.1**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**38.8**	<0.01	**0.65**	<0.01	**17.3**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**62.5**	<0.01	**0.87**	<0.01	**24.5**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**105**	**113**	**113**	**105**	**98.0**
13C8-PFOA	----	0.02	%	**100**	**104**	**99.9**	**101**	**102**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_QC321_201023	----	----	----	----
				23-Oct-2020 00:00	----	----	----	----
				EB2027817-051	--------	--------	--------	--------
				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	0.02	µg/L	<0.02	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_QC321_201023	----	----	----	----
				23-Oct-2020 00:00	----	----	----	----
				EB2027817-051	--------	--------	--------	--------
				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	<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	%	**108**	----	----	----	----
13C8-PFOA	----	0.02	%	**99.9**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
		Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2027817**	Page	: 1 of 22
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Order number	: 60612563 2.1	Date Analysis Commenced	: 24-Oct-2020
C-O-C number	: ----	Issue Date	: 29-Oct-2020
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 51		
No. of samples analysed	: 51		

ilac-MRA NATA
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. 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

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.

[redacted]	Senior Organic Chemist	Brisbane Organics, Stafford, QLD
	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Senior Inorganic Chemist	Brisbane Organics, Stafford, QLD
	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	2IC 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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 3327306)									
EB2027732-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	25	24	6.18	No Limit
EB2027817-006	0207_MW223_201019	EA025H: Suspended Solids (SS)	----	5	mg/L	159	170	6.54	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 3326849)									
EB2027773-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	76	75	0.00	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	76	75	0.00	0% - 20%
EB2027817-021	0207_MW299_201020	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	710	724	1.84	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	710	724	1.84	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 3328548)									
EB2027813-006	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2200	2220	0.683	0% - 20%
EB2027467-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 3328549)									
EB2027813-006	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	15400	15400	0.0298	0% - 20%
EB2027467-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	9	10	0.00	No Limit
ED093F: Dissolved Major Cations (QC Lot: 3326546)									
EB2027722-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	2	2	0.00	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	1	1	0.00	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	828	820	1.00	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	22	23	0.00	0% - 20%
EB2027817-018	0207_MW232_201020	ED093F: Calcium	7440-70-2	1	mg/L	14	14	0.00	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	12	12	0.00	0% - 50%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
ED093F: Dissolved Major Cations (QC Lot: 3326546) - continued									
EB2027817-018	0207_MW232_201020	ED093F: Sodium	7440-23-5	1	mg/L	31	32	0.00	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	<1	<1	0.00	No Limit
EP002: Dissolved Organic Carbon (DOC) (QC Lot: 3327783)									
EB2025219-001	Anonymous	EP002: Dissolved Organic Carbon	----	1	mg/L	11	7	43.9	No Limit
EB2027817-003	0207_MW198_201019	EP002: Dissolved Organic Carbon	----	1	mg/L	7	5	29.4	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327268)									
EB2027817-031	0207_MW262_201021	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	0.07	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.07	0.06	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.13	0.14	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327269)									
EB2027817-035	0207_MW204_201022	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	25.3	26.6	5.03	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	13.6	13.7	0.736	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	16.2	15.1	6.71	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	101	97.7	3.50	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	4.67	4.43	5.39	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.20	<0.25	22.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327844)									
EB2027716-003	Anonymous	EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327845)									
EB2027817-002	0207_MW178_201019	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2027817-015	0207_MW241_201020	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	2.64	2.78	5.20	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327845) - continued									
EB2027817-015	0207_MW241_201020	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.17	0.16	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.16	0.17	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	1.42	1.40	1.58	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.09	0.10	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3330399)									
EB2027817-019	0207_MW252_201020	EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	16.3	16.3	0.184	0% - 20%
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	1.16	1.00	14.8	0% - 50%
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	1.12	1.07	4.57	0% - 50%
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	6.55	5.84	11.5	0% - 20%
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.46	0.47	2.15	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.10	<0.10	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3333348)									
EB2027817-033	0207_MW276_201021	EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	10.9	12.0	9.09	0% - 20%
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.96	0.96	0.00	0% - 20%
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	1.16	1.09	5.70	0% - 20%
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	8.90	8.51	4.45	0% - 20%
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.63	0.62	2.08	0% - 20%
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327268)									
EB2027817-031	0207_MW262_201021	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327268) - continued									
EB2027817-031	0207_MW262_201021	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327269)									
EB2027817-035	0207_MW204_201022	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	6.12	6.41	4.58	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	4.67	4.55	2.61	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	21.8	21.6	1.17	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	3.93	3.78	3.99	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.20	<0.25	22.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.20	<0.25	22.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.20	<0.25	22.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.20	<0.25	22.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.20	<0.25	22.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.50	<0.62	22.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	1.5	<1.2	18.4	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327844)									
EB2027716-003	Anonymous	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	<0.10	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327845)									
EB2027817-002	0207_MW178_201019	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327845) - continued									
EB2027817-015	0207_MW241_201020	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.13	0.13	0.00	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.08	0.08	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.24	0.25	0.00	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3330399)									
EB2027817-019	0207_MW252_201020	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.68	0.59	14.2	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.65	0.53	20.3	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.55	1.33	15.3	0% - 50%
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.38	0.30	23.5	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.25	<0.25	0.00	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.50	<0.50	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3333348)									
EB2027817-033	0207_MW276_201021	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.56	0.57	2.29	0% - 20%
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.38	0.37	0.00	0% - 50%
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.78	1.75	1.70	0% - 20%
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.29	0.28	3.91	0% - 50%
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.35	0.33	4.12	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327268)									
EB2027817-031	0207_MW262_201021	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327268) - continued									
EB2027817-031	0207_MW262_201021	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327269)									
EB2027817-035	0207_MW204_201022	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.20	<0.25	22.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.20	<0.25	22.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.20	<0.25	22.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.50	<0.62	22.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.50	<0.62	22.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.50	<0.62	22.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.50	<0.62	22.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327844)									
EB2027716-003	Anonymous	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327845)									
EB2027817-002	0207_MW178_201019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027817-015	0207_MW241_201020	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3330399)									
EB2027817-019	0207_MW252_201020	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.25	<0.25	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.25	<0.25	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.25	<0.25	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.25	<0.25	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3333348)									
EB2027817-033	0207_MW276_201021	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327268)									
EB2027817-031	0207_MW262_201021	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327269)									
EB2027817-035	0207_MW204_201022	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.20	<0.25	22.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.22	<0.25	12.5	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.20	<0.25	22.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.20	<0.25	22.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327844)									
EB2027716-003	Anonymous	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327845)									
EB2027817-002	0207_MW178_201019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027817-015	0207_MW241_201020	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3330399)									
EB2027817-019	0207_MW252_201020	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.10	<0.10	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3333348)									
EB2027817-033	0207_MW276_201021	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3327268)									
EB2027817-031	0207_MW262_201021	EP231X: Sum of PFAS	----	0.01	µg/L	0.32	0.33	3.08	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.19	0.21	10.0	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.30	0.31	3.28	0% - 20%
EP231P: PFAS Sums (QC Lot: 3327269)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231P: PFAS Sums (QC Lot: 3327269) - continued									
EB2027817-035	0207_MW204_201022	EP231X: Sum of PFAS	----	0.01	µg/L	199	194	2.62	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	126	124	1.60	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	178	174	2.16	0% - 20%
EP231P: PFAS Sums (QC Lot: 3327844)									
EB2027716-003	Anonymous	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3327845)									
EB2027817-002	0207_MW178_201019	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EB2027817-015	0207_MW241_201020	EP231X: Sum of PFAS	----	0.01	µg/L	4.99	5.13	2.77	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	4.06	4.18	2.91	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	4.74	4.86	2.50	0% - 20%
EP231P: PFAS Sums (QC Lot: 3330399)									
EB2027817-019	0207_MW252_201020	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	28.8	27.4	5.05	0% - 20%
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	22.8	22.1	3.16	0% - 20%
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	27.3	25.9	5.19	0% - 20%
EP231P: PFAS Sums (QC Lot: 3333348)									
EB2027817-033	0207_MW276_201021	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	25.9	26.5	2.18	0% - 20%
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	19.8	20.5	3.52	0% - 20%
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	24.1	24.8	2.66	0% - 20%

Method Blank (MB) and Laboratory Control Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 3327306)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	108	88.0	112
				<5	1000 mg/L	99.3	88.0	112
				<5	951 mg/L	108	87.9	116
ED037P: Alkalinity by PC Titrator (QCLot: 3326849)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	95.2	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 3328548)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	104	85.0	118
				<1	100 mg/L	93.4	85.0	118
ED045G: Chloride by Discrete Analyser (QCLot: 3328549)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	98.8	90.0	115
				<1	1000 mg/L	104	90.0	115
ED093F: Dissolved Major Cations (QCLot: 3326546)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	101	70.0	130
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	100	70.0	130
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	70.0	130
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	70.0	130
EP002: Dissolved Organic Carbon (DOC) (QCLot: 3327783)								
EP002: Dissolved Organic Carbon	----	1	mg/L	<1	10 mg/L	89.2	80.0	112
				<1	100 mg/L	96.6	80.0	112
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327268)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	103	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	110	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	103	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	116	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	109	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	95.8	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327269)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	104	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	0.02	µg/L	<0.02	0.2373 µg/L	102	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	112	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	89.9	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	79.0	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327844)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327844) - continued								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	104	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	104	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.475 µg/L	97.5	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	107	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	102	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	98.0	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327845)								
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	88.6	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	88.7	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	90.9	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	85.3	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3330399)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	121	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	112	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.475 µg/L	104	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	99.8	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	92.3	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	91.0	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3333348)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	86.7	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	98.5	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.475 µg/L	95.2	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	93.7	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	82.9	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	83.8	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327268)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	110	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	111	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	101	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	99.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	103	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	111	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	115	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	106	65.0	144

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327268) - continued								
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	120	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327269)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	112	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	105	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	105	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	94.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	98.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	96.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	95.4	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	107	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	103	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327844)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	102	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	110	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	105	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	102	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	118	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	104	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	100	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	111	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	108	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	103	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	110	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327845)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	79.7	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	82.0	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	86.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	82.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	85.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	85.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	90.8	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	88.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	82.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	87.0	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3330399)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3330399) - continued								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	92.0	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	93.0	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	105	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	109	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	107	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	99.6	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	109	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	108	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	107	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	101	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	96.2	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3333348)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	88.4	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	89.2	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	88.6	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	89.2	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	88.0	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	89.0	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	82.8	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	97.6	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	91.6	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	89.2	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	94.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327268)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	106	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	128	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	110	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	117	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	110	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	98.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327269)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	113	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	100	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	91.8	60.5	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327269) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	106	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	98.8	62.6	138
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	109	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327844)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	109	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	98.4	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	100	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	97.4	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	103	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	111	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	96.6	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327845)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	87.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	77.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	75.6	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	82.7	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	79.8	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	75.2	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
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3330399)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	97.2	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	120	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	97.8	62.1	136

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3330399) - continued								
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	96.6	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	88.8	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	96.8	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	87.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3333348)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	89.6	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	98.6	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	83.7	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	86.6	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	86.3	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	103	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	99.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327268)								
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	102	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	130	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	110	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327269)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	106	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	102	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	94.4	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	110	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327844)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	89.6	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	106	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	113	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	110	62.2	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327845)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	93.2	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	79.7	64.0	140

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327845) - continued								
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	85.8	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	80.5	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3330399)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	99.4	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	100	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	87.5	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	96.5	62.2	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3333348)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	83.4	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	89.7	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	91.2	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	78.7	62.2	139
EP231P: PFAS Sums (QCLot: 3327268)								
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: 3327269)								
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: 3327844)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3327845)								
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: 3330399)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3333348)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231P: PFAS Sums (QCLot: 3333348) - continued								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: 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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 3328548)							
EB2027468-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	20 mg/L	97.1	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 3328549)							
EB2027468-001	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	109	70.0	130
EP002: Dissolved Organic Carbon (DOC) (QCLot: 3327783)							
EB2025220-001	Anonymous	EP002: Dissolved Organic Carbon	----	100 mg/L	85.4	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327844)							
EB2027716-004	Anonymous	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.443 µg/L	103	70.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.47 µg/L	106	70.0	130
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.475 µg/L	101	70.0	130
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	108	70.0	130
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	107	70.0	130
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	109	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327845)							
EB2027817-004	0207_MW206_201019	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	# Not Determined	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	# Not Determined	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	108	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	89.1	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3330399)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3330399) - continued							
EB2027817-030	0207_MW233_201021	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.443 µg/L	120	70.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.47 µg/L	104	70.0	130
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.475 µg/L	107	70.0	130
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	94.5	70.0	130
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	89.0	70.0	130
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	96.7	70.0	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327844)							
EB2027716-004	Anonymous	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	105	70.0	130
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	108	70.0	130
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	112	70.0	130
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	104	70.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	120	70.0	130
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	104	70.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	101	70.0	130
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	107	70.0	130
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	103	70.0	130
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	97.4	70.0	130
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	108	70.0	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327845)							
EB2027817-004	0207_MW206_201019	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	96.7	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	86.5	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	# Not Determined	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	90.7	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	91.1	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	86.3	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.0	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	97.8	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	98.1	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	92.1	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	95.0	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3330399)							
EB2027817-030	0207_MW233_201021	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	93.3	70.0	130
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	86.6	70.0	130
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	94.4	70.0	130
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	101	70.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	101	70.0	130
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	95.2	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3330399) - continued							
EB2027817-030	0207_MW233_201021	EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	105	70.0	130
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	103	70.0	130
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	103	70.0	130
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	95.0	70.0	130
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	94.4	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327844)							
EB2027716-004	Anonymous	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	108	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	98.2	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	94.0	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	101	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	101	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	110	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	107	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327845)							
EB2027817-004	0207_MW206_201019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	92.2	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	75.2	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	80.9	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	101	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	89.7	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	102	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3330399)							
EB2027817-030	0207_MW233_201021	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	94.4	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	104	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	87.1	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3330399) - continued							
EB2027817-030	0207_MW233_201021	EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	102	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	98.2	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	85.4	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	85.8	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327844)							
EB2027716-004	Anonymous	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.468 µg/L	92.9	70.0	130
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.475 µg/L	105	70.0	130
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	114	70.0	130
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	113	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327845)							
EB2027817-004	0207_MW206_201019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	94.0	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	90.6	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	102	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	106	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3330399)							
EB2027817-030	0207_MW233_201021	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.468 µg/L	100	70.0	130
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.475 µg/L	97.0	70.0	130
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	92.3	70.0	130
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	123	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2027817**	Page	: 1 of 12
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Site	: ----	Issue Date	: 29-Oct-2020
Sampler	: [redacted]	No. of samples received	: 51
Order number	: 60612563 2.1	No. of samples analysed	: 51

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							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2027817--004	0207_MW206_201019	**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	EB2027817--004	0207_MW206_201019	**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	EB2027817--004	0207_MW206_201019	**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	EB2027817--004	0207_MW206_201019	**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	EB2027817--004	0207_MW206_201019	**Perfluorohexanoic acid (PFHxA)**	307-24-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	40	2.50	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*

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
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025H) 0207_MW198_201019, 0207_MW223_201019	**19-Oct-2020**	**----**	----	----	**26-Oct-2020**	26-Oct-2020	✓
Clear Plastic Bottle - Natural (EA025H) 0207_MW172_201020, 0207_MW253_201020, 0207_MW236_201020, 0207_MW232_201020, 0207_MW299_201020	**20-Oct-2020**	**----**	----	----	**26-Oct-2020**	27-Oct-2020	✓
Clear Plastic Bottle - Natural (EA025H) 0207_MW255_201021	**21-Oct-2020**	**----**	----	----	**26-Oct-2020**	28-Oct-2020	✓
Clear Plastic Bottle - Natural (EA025H) 0207_MW202_201023	**23-Oct-2020**	**----**	----	----	**26-Oct-2020**	30-Oct-2020	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P) 0207_MW198_201019, 0207_MW223_201019	**19-Oct-2020**	**----**	----	----	**26-Oct-2020**	02-Nov-2020	✓
Clear Plastic Bottle - Natural (ED037-P) 0207_MW172_201020, 0207_MW253_201020, 0207_MW236_201020, 0207_MW232_201020, 0207_MW299_201020	**20-Oct-2020**	**----**	----	----	**26-Oct-2020**	03-Nov-2020	✓
Clear Plastic Bottle - Natural (ED037-P) 0207_MW255_201021	**21-Oct-2020**	**----**	----	----	**26-Oct-2020**	04-Nov-2020	✓
Clear Plastic Bottle - Natural (ED037-P) 0207_MW202_201023	**23-Oct-2020**	**----**	----	----	**26-Oct-2020**	06-Nov-2020	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G) 0207_MW198_201019, 0207_MW223_201019	**19-Oct-2020**	**----**	----	----	**26-Oct-2020**	16-Nov-2020	✓
Clear Plastic Bottle - Natural (ED041G) 0207_MW172_201020, 0207_MW253_201020, 0207_MW236_201020, 0207_MW232_201020, 0207_MW299_201020	**20-Oct-2020**	**----**	----	----	**26-Oct-2020**	17-Nov-2020	✓
Clear Plastic Bottle - Natural (ED041G) 0207_MW255_201021	**21-Oct-2020**	**----**	----	----	**26-Oct-2020**	18-Nov-2020	✓
Clear Plastic Bottle - Natural (ED041G) 0207_MW202_201023	**23-Oct-2020**	**----**	----	----	**26-Oct-2020**	20-Nov-2020	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) 0207_MW198_201019, 0207_MW223_201019	**19-Oct-2020**	**----**	----	----	**26-Oct-2020**	16-Nov-2020	✓
Clear Plastic Bottle - Natural (ED045G) 0207_MW172_201020, 0207_MW253_201020, 0207_MW236_201020, 0207_MW232_201020, 0207_MW299_201020	**20-Oct-2020**	**----**	----	----	**26-Oct-2020**	17-Nov-2020	✓
Clear Plastic Bottle - Natural (ED045G) 0207_MW255_201021	**21-Oct-2020**	**----**	----	----	**26-Oct-2020**	18-Nov-2020	✓
Clear Plastic Bottle - Natural (ED045G) 0207_MW202_201023	**23-Oct-2020**	**----**	----	----	**26-Oct-2020**	20-Nov-2020	✓

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
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Natural (ED093F) 0207_MW198_201019, 0207_MW223_201019	**19-Oct-2020**	**----**	----	----	**24-Oct-2020**	26-Oct-2020	✓
Clear Plastic Bottle - Natural (ED093F) 0207_MW172_201020, 0207_MW253_201020, 0207_MW236_201020, 0207_MW232_201020, 0207_MW299_201020	**20-Oct-2020**	**----**	----	----	**24-Oct-2020**	27-Oct-2020	✓
Clear Plastic Bottle - Natural (ED093F) 0207_MW255_201021	**21-Oct-2020**	**----**	----	----	**24-Oct-2020**	28-Oct-2020	✓
Clear Plastic Bottle - Natural (ED093F) 0207_MW202_201023	**23-Oct-2020**	**----**	----	----	**24-Oct-2020**	30-Oct-2020	✓
EP002: Dissolved Organic Carbon (DOC)							
Amber DOC Filtered- Sulfuric Preserved (EP002) 0207_MW198_201019, 0207_MW223_201019	**19-Oct-2020**	**----**	----	----	**26-Oct-2020**	16-Nov-2020	✓
Amber DOC Filtered- Sulfuric Preserved (EP002) 0207_MW172_201020, 0207_MW253_201020, 0207_MW236_201020, 0207_MW232_201020, 0207_MW299_201020	**20-Oct-2020**	**----**	----	----	**26-Oct-2020**	17-Nov-2020	✓
Amber DOC Filtered- Sulfuric Preserved (EP002) 0207_MW255_201021	**21-Oct-2020**	**----**	----	----	**26-Oct-2020**	18-Nov-2020	✓
Amber DOC Filtered- Sulfuric Preserved (EP002) 0207_MW202_201023	**23-Oct-2020**	**----**	----	----	**26-Oct-2020**	20-Nov-2020	✓

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-INJ)							
0207_MW167_201019, 0207_MW178_201019, 0207_MW198_201019, 0207_MW206_201019, 0207_MW221_201019, 0207_MW223_201019, 0207_MW222_201019, 0207_MW230_201019, 0207_MW174_201020	**19-Oct-2020**	**26-Oct-2020**	17-Apr-2021	✓	**26-Oct-2020**	17-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_QC317_201019, 0207_QC131_201019	**19-Oct-2020**	**27-Oct-2020**	17-Apr-2021	✓	**27-Oct-2020**	17-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW172_201020, 0207_MW173_201020, 0207_MW254_201020, 0207_MW253_201020, 0207_MW249_201020, 0207_MW241_201020, 0207_MW235_201020, 0207_MW236_201020	**20-Oct-2020**	**26-Oct-2020**	18-Apr-2021	✓	**26-Oct-2020**	18-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW232_201020, 0207_MW252_201020, 0207_MW300_201020, 0207_MW299_201020, 0207_MW245_201020, 0207_MW179_201020, 0207_MW193_201020, 0207_MW229_201020, 0207_MW189_201020, 0207_MW187_201020, 0207_QC318_201020, 0207_QC132_201020, 0207_QC133_201020, 0207_QC134_201020	**20-Oct-2020**	**27-Oct-2020**	18-Apr-2021	✓	**27-Oct-2020**	18-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW255_201021, 0207_MW272_201021, 0207_MW233_201021, 0207_MW262_201021, 0207_MW257_201021, 0207_QC319_201021, 0207_QC135_201021	**21-Oct-2020**	**27-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW276_201021	**21-Oct-2020**	**28-Oct-2020**	19-Apr-2021	✓	**28-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW203_201022, 0207_MW204_201022, 0207_MW205_201022, 0207_MW264_201022, 0207_QC320_201022, 0207_QC136_201022	**22-Oct-2020**	**27-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW242_201023, 0207_MW201_201023, 0207_MW202_201023, 0207_QC321_201023	**23-Oct-2020**	**27-Oct-2020**	21-Apr-2021	✓	**27-Oct-2020**	21-Apr-2021	✓

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-INJ)							
0207_MW167_201019, 0207_MW178_201019, 0207_MW198_201019, 0207_MW206_201019, 0207_MW221_201019, 0207_MW223_201019, 0207_MW222_201019, 0207_MW230_201019, 0207_MW174_201020	**19-Oct-2020**	**26-Oct-2020**	17-Apr-2021	✓	**26-Oct-2020**	17-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_QC317_201019, 0207_QC131_201019	**19-Oct-2020**	**27-Oct-2020**	17-Apr-2021	✓	**27-Oct-2020**	17-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW172_201020, 0207_MW173_201020, 0207_MW254_201020, 0207_MW253_201020, 0207_MW249_201020, 0207_MW241_201020, 0207_MW235_201020, 0207_MW236_201020	**20-Oct-2020**	**26-Oct-2020**	18-Apr-2021	✓	**26-Oct-2020**	18-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW232_201020, 0207_MW252_201020, 0207_MW300_201020, 0207_MW299_201020, 0207_MW245_201020, 0207_MW179_201020, 0207_MW193_201020, 0207_MW229_201020, 0207_MW189_201020, 0207_MW187_201020, 0207_QC318_201020, 0207_QC132_201020, 0207_QC133_201020, 0207_QC134_201020	**20-Oct-2020**	**27-Oct-2020**	18-Apr-2021	✓	**27-Oct-2020**	18-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW255_201021, 0207_MW272_201021, 0207_MW233_201021, 0207_MW262_201021, 0207_MW257_201021, 0207_QC319_201021, 0207_QC135_201021	**21-Oct-2020**	**27-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW276_201021	**21-Oct-2020**	**28-Oct-2020**	19-Apr-2021	✓	**28-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW203_201022, 0207_MW204_201022, 0207_MW205_201022, 0207_MW264_201022, 0207_QC320_201022, 0207_QC136_201022	**22-Oct-2020**	**27-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW242_201023, 0207_MW201_201023, 0207_MW202_201023, 0207_QC321_201023	**23-Oct-2020**	**27-Oct-2020**	21-Apr-2021	✓	**27-Oct-2020**	21-Apr-2021	✓

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-INJ)							
0207_MW167_201019, 0207_MW178_201019, 0207_MW198_201019, 0207_MW206_201019, 0207_MW221_201019, 0207_MW223_201019, 0207_MW222_201019, 0207_MW230_201019, 0207_MW174_201020	**19-Oct-2020**	**26-Oct-2020**	17-Apr-2021	✓	**26-Oct-2020**	17-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_QC317_201019, 0207_QC131_201019	**19-Oct-2020**	**27-Oct-2020**	17-Apr-2021	✓	**27-Oct-2020**	17-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW172_201020, 0207_MW173_201020, 0207_MW254_201020, 0207_MW253_201020, 0207_MW249_201020, 0207_MW241_201020, 0207_MW235_201020, 0207_MW236_201020	**20-Oct-2020**	**26-Oct-2020**	18-Apr-2021	✓	**26-Oct-2020**	18-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW232_201020, 0207_MW252_201020, 0207_MW300_201020, 0207_MW299_201020, 0207_MW245_201020, 0207_MW179_201020, 0207_MW193_201020, 0207_MW229_201020, 0207_MW189_201020, 0207_MW187_201020, 0207_QC318_201020, 0207_QC132_201020, 0207_QC133_201020, 0207_QC134_201020	**20-Oct-2020**	**27-Oct-2020**	18-Apr-2021	✓	**27-Oct-2020**	18-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW255_201021, 0207_MW272_201021, 0207_MW233_201021, 0207_MW262_201021, 0207_MW257_201021, 0207_QC319_201021, 0207_QC135_201021	**21-Oct-2020**	**27-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW276_201021	**21-Oct-2020**	**28-Oct-2020**	19-Apr-2021	✓	**28-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW203_201022, 0207_MW204_201022, 0207_MW205_201022, 0207_MW264_201022, 0207_QC320_201022, 0207_QC136_201022	**22-Oct-2020**	**27-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW242_201023, 0207_MW201_201023, 0207_MW202_201023, 0207_QC321_201023	**23-Oct-2020**	**27-Oct-2020**	21-Apr-2021	✓	**27-Oct-2020**	21-Apr-2021	✓

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-INJ)							
0207_MW167_201019, 0207_MW178_201019, 0207_MW198_201019, 0207_MW206_201019, 0207_MW221_201019, 0207_MW223_201019, 0207_MW222_201019, 0207_MW230_201019, 0207_MW174_201020	**19-Oct-2020**	**26-Oct-2020**	17-Apr-2021	✓	**26-Oct-2020**	17-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_QC317_201019, 0207_QC131_201019	**19-Oct-2020**	**27-Oct-2020**	17-Apr-2021	✓	**27-Oct-2020**	17-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW172_201020, 0207_MW173_201020, 0207_MW254_201020, 0207_MW253_201020, 0207_MW249_201020, 0207_MW241_201020, 0207_MW235_201020, 0207_MW236_201020	**20-Oct-2020**	**26-Oct-2020**	18-Apr-2021	✓	**26-Oct-2020**	18-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW232_201020, 0207_MW252_201020, 0207_MW300_201020, 0207_MW299_201020, 0207_MW245_201020, 0207_MW179_201020, 0207_MW193_201020, 0207_MW229_201020, 0207_MW189_201020, 0207_MW187_201020, 0207_QC318_201020, 0207_QC132_201020, 0207_QC133_201020, 0207_QC134_201020	**20-Oct-2020**	**27-Oct-2020**	18-Apr-2021	✓	**27-Oct-2020**	18-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW255_201021, 0207_MW272_201021, 0207_MW233_201021, 0207_MW262_201021, 0207_MW257_201021, 0207_QC319_201021, 0207_QC135_201021	**21-Oct-2020**	**27-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW276_201021	**21-Oct-2020**	**28-Oct-2020**	19-Apr-2021	✓	**28-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW203_201022, 0207_MW204_201022, 0207_MW205_201022, 0207_MW264_201022, 0207_QC320_201022, 0207_QC136_201022	**22-Oct-2020**	**27-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW242_201023, 0207_MW201_201023, 0207_MW202_201023, 0207_QC321_201023	**23-Oct-2020**	**27-Oct-2020**	21-Apr-2021	✓	**27-Oct-2020**	21-Apr-2021	✓

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-INJ)							
0207_MW167_201019, 0207_MW178_201019, 0207_MW198_201019, 0207_MW206_201019, 0207_MW221_201019, 0207_MW223_201019, 0207_MW222_201019, 0207_MW230_201019, 0207_MW174_201020	**19-Oct-2020**	**26-Oct-2020**	17-Apr-2021	✓	**26-Oct-2020**	17-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_QC317_201019, 0207_QC131_201019	**19-Oct-2020**	**27-Oct-2020**	17-Apr-2021	✓	**27-Oct-2020**	17-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW172_201020, 0207_MW173_201020, 0207_MW254_201020, 0207_MW253_201020, 0207_MW249_201020, 0207_MW241_201020, 0207_MW235_201020, 0207_MW236_201020	**20-Oct-2020**	**26-Oct-2020**	18-Apr-2021	✓	**26-Oct-2020**	18-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW232_201020, 0207_MW252_201020, 0207_MW300_201020, 0207_MW299_201020, 0207_MW245_201020, 0207_MW179_201020, 0207_MW193_201020, 0207_MW229_201020, 0207_MW189_201020, 0207_MW187_201020, 0207_QC318_201020, 0207_QC132_201020, 0207_QC133_201020, 0207_QC134_201020	**20-Oct-2020**	**27-Oct-2020**	18-Apr-2021	✓	**27-Oct-2020**	18-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW255_201021, 0207_MW272_201021, 0207_MW233_201021, 0207_MW262_201021, 0207_MW257_201021, 0207_QC319_201021, 0207_QC135_201021	**21-Oct-2020**	**27-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW276_201021	**21-Oct-2020**	**28-Oct-2020**	19-Apr-2021	✓	**28-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW203_201022, 0207_MW204_201022, 0207_MW205_201022, 0207_MW264_201022, 0207_QC320_201022, 0207_QC136_201022	**22-Oct-2020**	**27-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW242_201023, 0207_MW201_201023, 0207_MW202_201023, 0207_QC321_201023	**23-Oct-2020**	**27-Oct-2020**	21-Apr-2021	✓	**27-Oct-2020**	21-Apr-2021	✓

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)							
Alkalinity by PC Titrator	ED037-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Organic Carbon	EP002	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	3	18	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by PC Titrator	ED037-P	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Organic Carbon	EP002	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	40	**7.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	3	18	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	3	18	**16.67**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Organic Carbon	EP002	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	40	**7.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	3	18	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Organic Carbon	EP002	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	40	**2.50**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	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
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions the librated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm APHA seal method 2 017-1-L
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Dissolved Organic Carbon	EP002	WATER	In house: Referenced to APHA 5310 B. This method is compliant with NEPM Schedule B(3). Samples are combusted at high termperature in the presence of an oxidative catalyst. The evolved carbon dioxide is quantified using an IR detector.
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.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. 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.

Preparation Methods	Method	Matrix	Method Descriptions
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
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 : **EB2027826**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: +[redacted]	Telephone	: [redacted]
Facsimile	: +[redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 23-Oct-2020 12:45	Issue Date	: 23-Oct-2020
Client Requested Due Date	: 29-Oct-2020	Scheduled Reporting Date	: **29-Oct-2020**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 1.6°C, 1.3°C, 1.9°C - Ice present
Receipt Detail	: Medium hard 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
- 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.

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	Client sampling date / time	Client sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2027826-001	23-Oct-2020 00:00	0207_MW056_201023	✓

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	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2027826**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020 12:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020 17:12
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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.

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.

[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 Contact 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: WATER (Matrix: WATER)				0207_MW056_201023	----	----	----	----
				23-Oct-2020 00:00	----	----	----	----
				EB2027826-001	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.03**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.03**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	**0.25**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.06**	----	----	----	----
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	**0.05**	----	----	----	----
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)				0207_MW056_201023	----	----	----	----
				23-Oct-2020 00:00	----	----	----	----
				EB2027826-001	--------	--------	--------	--------
				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	**0.45**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.31**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.42**	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**89.7**	----	----	----	----
13C8-PFOA	----	0.02	%	**99.9**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
		Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2027826**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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

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.

[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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	0207_MW056_201023	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.04	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.25	0.27	5.50	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271)									
EB2027826-001	0207_MW056_201023	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271) - continued									
EB2027835-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327271)									
EB2027826-001	0207_MW056_201023	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	0207_MW056_201023	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271) - continued									
EB2027826-001	0207_MW056_201023	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3327271)									
EB2027826-001	0207_MW056_201023	EP231X: Sum of PFAS	----	0.01	µg/L	0.45	0.48	6.45	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.31	0.33	6.25	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.42	0.45	6.90	0% - 20%
EB2027835-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	96.7	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	0.02	µg/L	<0.02	0.2373 µg/L	93.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	108	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	99.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)								
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	111	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	94.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	112	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	108	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	101	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	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	96.7	67.0	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	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	100	64.2	133
EP231P: PFAS Sums (QCLot: 3327271)								
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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	102	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	104	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	114	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	103	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	91.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	119	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	114	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	107	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	97.4	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	100	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	100	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	115	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	99.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	108	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	113	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	103	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271) - continued							
EB2027831-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	107	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	120	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	108	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	108	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	112	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	123	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2027826**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Site	: ----	Issue Date	: 28-Oct-2020
Sampler	: ----	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW056_201023	**23-Oct-2020**	**26-Oct-2020**	21-Apr-2021	✓	**27-Oct-2020**	21-Apr-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW056_201023	**23-Oct-2020**	**26-Oct-2020**	21-Apr-2021	✓	**27-Oct-2020**	21-Apr-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW056_201023	**23-Oct-2020**	**26-Oct-2020**	21-Apr-2021	✓	**27-Oct-2020**	21-Apr-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW056_201023	**23-Oct-2020**	**26-Oct-2020**	21-Apr-2021	✓	**27-Oct-2020**	21-Apr-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW056_201023	**23-Oct-2020**	**26-Oct-2020**	21-Apr-2021	✓	**27-Oct-2020**	21-Apr-2021	✓

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	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**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 : **EB2027828**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 23-Oct-2020 12:45	Issue Date	: 23-Oct-2020
Client Requested Due Date	: 29-Oct-2020	Scheduled Reporting Date	: **29-Oct-2020**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 1.6°C, 1.3°C, 1.9°C - Ice present
Receipt Detail	: Medium hard 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
- 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.

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	Client sampling date / time	Client sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2027828-001	22-Oct-2020 00:00	0207_MW022_201022	✓

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	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2027828**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020 12:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020 17:11
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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.

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.

[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 Contact 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: WATER (Matrix: WATER)				0207_MW022_201022	----	----	----	----
				22-Oct-2020 00:00	----	----	----	----
				EB2027828-001	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.03**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.03**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	**0.24**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.03**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.60**	----	----	----	----
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	**0.04**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.02**	----	----	----	----
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)				0207_MW022_201022	----	----	----	----
				22-Oct-2020 00:00	----	----	----	----
				EB2027828-001	--------	--------	--------	--------
				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	**0.99**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.84**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.93**	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**91.9**	----	----	----	----
13C8-PFOA	----	0.02	%	**101**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

		Recovery Limits (%)	
		Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2027828**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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

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.

[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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.04	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.25	0.27	5.50	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271) - continued									
EB2027835-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271) - continued									
EB2027826-001	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.45	0.48	6.45	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.31	0.33	6.25	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.42	0.45	6.90	0% - 20%
EB2027835-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	96.7	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	0.02	µg/L	<0.02	0.2373 µg/L	93.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	108	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	99.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)								
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	111	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	94.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	112	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	108	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	101	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	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	96.7	67.0	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	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	100	64.2	133
EP231P: PFAS Sums (QCLot: 3327271)								
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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	102	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	104	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	114	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	103	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	91.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	119	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	114	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	107	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	97.4	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	100	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	100	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	115	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	99.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	108	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	113	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	103	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271) - continued							
EB2027831-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	107	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	120	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	108	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	108	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	112	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	123	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2027828**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Site	: ----	Issue Date	: 28-Oct-2020
Sampler	: ----	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW022_201022	**22-Oct-2020**	**26-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW022_201022	**22-Oct-2020**	**26-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW022_201022	**22-Oct-2020**	**26-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW022_201022	**22-Oct-2020**	**26-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW022_201022	**22-Oct-2020**	**26-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓

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	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**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 : **EB2027831**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: +[redacted]	Telephone	: +[redacted]
Facsimile	: +[redacted]	Facsimile	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 23-Oct-2020 12:45	Issue Date	: 23-Oct-2020
Client Requested Due Date	: 29-Oct-2020	Scheduled Reporting Date	: **29-Oct-2020**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 1.6°C, 1.3°C, 1.9°C
Receipt Detail	: Medium hard 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
- 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.

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	Client sampling date / time	Client sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2027831-001	22-Oct-2020 00:00	0207_MW297_201022	✓

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]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
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- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2027831**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020 12:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020 17:11
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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.

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.

[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 Contact 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: WATER (Matrix: WATER)				0207_MW297_201022	----	----	----	----
				22-Oct-2020 00:00	----	----	----	----
				EB2027831-001	--------	--------	--------	--------
				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	0.02	µg/L	<0.02	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW297_201022	----	----	----	----
				22-Oct-2020 00:00	----	----	----	----
				EB2027831-001	--------	--------	--------	--------
				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	<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	%	**92.9**	----	----	----	----
13C8-PFOA	----	0.02	%	**100**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
		Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2027831**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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

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.

[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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.04	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.25	0.27	5.50	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271) - continued									
EB2027835-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271) - continued									
EB2027826-001	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.45	0.48	6.45	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.31	0.33	6.25	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.42	0.45	6.90	0% - 20%
EB2027835-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	96.7	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	0.02	µg/L	<0.02	0.2373 µg/L	93.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	108	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	99.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)								
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	111	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	94.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	112	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	108	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	101	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	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	96.7	67.0	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	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	100	64.2	133
EP231P: PFAS Sums (QCLot: 3327271)								
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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	0207_MW297_201022	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	102	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	104	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	114	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	103	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	91.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)							
EB2027831-001	0207_MW297_201022	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	119	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	114	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	107	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	97.4	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	100	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	100	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	115	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	99.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	108	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)							
EB2027831-001	0207_MW297_201022	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	113	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	103	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271) - continued							
EB2027831-001	0207_MW297_201022	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	107	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	120	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	108	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	0207_MW297_201022	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	108	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	112	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	123	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2027831**	Page	: 1 of 4
Client	: [redacted]	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Site	: ----	Issue Date	: 28-Oct-2020
Sampler	: ----	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW297_201022	**22-Oct-2020**	**26-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW297_201022	**22-Oct-2020**	**26-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW297_201022	**22-Oct-2020**	**26-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW297_201022	**22-Oct-2020**	**26-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW297_201022	**22-Oct-2020**	**26-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓

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	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**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	: **EB2027833**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: +[redacted]	Telephone	: +[redacted]
Facsimile	: +[redacted]	Facsimile	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 23-Oct-2020 12:45	Issue Date	: 23-Oct-2020
Client Requested Due Date	: 29-Oct-2020	Scheduled Reporting Date	: **29-Oct-2020**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 1.6°C, 1.3°C, 1.9°C - Ice present
Receipt Detail	: Medium hard 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
- 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.

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	Client sampling date / time	Client sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2027833-001	22-Oct-2020 00:00	0207_MW291_201022	✓

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	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2027833**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020 12:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Oct-2020
C-O-C number	: ----	Issue Date	: 29-Oct-2020 13:54
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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.

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.

[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 Contact 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-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where low sample volume is received.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW291_201022	----	----	----	----
				22-Oct-2020 00:00	----	----	----	----
				EB2027833-001	--------	--------	--------	--------
				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	0.02	µg/L	<0.02	----	----	----	----
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	0.10	µg/L	<0.10	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW291_201022	----	----	----	----
				22-Oct-2020 00:00	----	----	----	----
				EB2027833-001	--------	--------	--------	--------
				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	**0.05**	----	----	----	----
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	**0.05**	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**86.7**	----	----	----	----
13C8-PFOA	----	0.02	%	**99.0**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
		Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2027833**	Page	: 1 of 6
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Oct-2020
C-O-C number	: ----	Issue Date	: 29-Oct-2020
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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

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.

[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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3330399)									
EB2027817-019	Anonymous	EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	16.3	16.3	0.184	0% - 20%
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	1.16	1.00	14.8	0% - 50%
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	1.12	1.07	4.57	0% - 50%
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	6.55	5.84	11.5	0% - 20%
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.46	0.47	2.15	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.10	<0.10	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3330399)									
EB2027817-019	Anonymous	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.68	0.59	14.2	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.65	0.53	20.3	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.55	1.33	15.3	0% - 50%
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.38	0.30	23.5	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.25	<0.25	0.00	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.50	<0.50	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3330399)									
EB2027817-019	Anonymous	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.25	<0.25	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.25	<0.25	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.25	<0.25	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.25	<0.25	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3330399)									
EB2027817-019	Anonymous	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.10	<0.10	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3330399)									
EB2027817-019	Anonymous	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	28.8	27.4	5.05	0% - 20%
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	22.8	22.1	3.16	0% - 20%
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	27.3	25.9	5.19	0% - 20%

Method Blank (MB) and Laboratory Control Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3330399)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	121	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	112	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.475 µg/L	104	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	99.8	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	92.3	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	91.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3330399)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	92.0	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	93.0	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	105	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	109	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	107	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	99.6	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	109	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	108	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	107	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	101	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	96.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3330399)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	97.2	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	120	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	97.8	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	96.6	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	88.8	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	96.8	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	87.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3330399)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	99.4	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	100	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	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3330399) - continued								
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	87.5	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	96.5	62.2	139
EP231P: PFAS Sums (QCLot: 3330399)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: 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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3330399)							
EB2027817-030	Anonymous	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.443 µg/L	120	70.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.47 µg/L	104	70.0	130
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.475 µg/L	107	70.0	130
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	94.5	70.0	130
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	89.0	70.0	130
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	96.7	70.0	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3330399)							
EB2027817-030	Anonymous	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	93.3	70.0	130
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	86.6	70.0	130
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	94.4	70.0	130
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	101	70.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	101	70.0	130
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	95.2	70.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	105	70.0	130
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	103	70.0	130
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	103	70.0	130
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	95.0	70.0	130
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	94.4	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3330399)							
EB2027817-030	Anonymous	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	94.4	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	104	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3330399) - continued							
EB2027817-030	Anonymous	EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	87.1	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	102	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	98.2	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	85.4	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	85.8	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3330399)							
EB2027817-030	Anonymous	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.468 µg/L	100	70.0	130
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.475 µg/L	97.0	70.0	130
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	92.3	70.0	130
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	123	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2027833**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Site	: ----	Issue Date	: 29-Oct-2020
Sampler	: ----	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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-INJ)							
0207_MW291_201022	**22-Oct-2020**	**27-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X-INJ)							
0207_MW291_201022	**22-Oct-2020**	**27-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X-INJ)							
0207_MW291_201022	**22-Oct-2020**	**27-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X-INJ)							
0207_MW291_201022	**22-Oct-2020**	**27-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X-INJ)							
0207_MW291_201022	**22-Oct-2020**	**27-Oct-2020**	20-Apr-2021	✓	**27-Oct-2020**	20-Apr-2021	✓

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-INJ	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	7	**14.29**	**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-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. 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.

Preparation Methods	Method	Matrix	Method Descriptions
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2027835**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: +[redacted]	Telephone	: +[redacted]
Facsimile	: +[redacted]	Facsimile	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 23-Oct-2020 12:45	Issue Date	: 23-Oct-2020
Client Requested Due Date	: 29-Oct-2020	Scheduled Reporting Date	: **29-Oct-2020**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 1.6°C, 1.3°C, 1.9°C - Ice present
Receipt Detail	: Medium hard 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
- 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.

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	Client sampling date / time	Client sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2027835-001	21-Oct-2020 00:00	0207_MW003_201021	✓

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]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

[redacted]

- EDI Format - ESDAT (ESDAT) Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2027835**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020 12:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020 17:12
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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.

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.

[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 Contact 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: WATER (Matrix: WATER)				0207_MW003_201021	----	----	----	----
				21-Oct-2020 00:00	----	----	----	----
				EB2027835-001	--------	--------	--------	--------
				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	0.02	µg/L	<0.02	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW003_201021	----	----	----	----
				21-Oct-2020 00:00	----	----	----	----
				EB2027835-001	--------	--------	--------	--------
				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	<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	%	**97.9**	----	----	----	----
13C8-PFOA	----	0.02	%	**101**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
		Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2027835**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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

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.

[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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.04	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.25	0.27	5.50	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2027835-001	0207_MW003_201021	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EB2027835-001	0207_MW003_201021	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271) - continued									
EB2027835-001	0207_MW003_201021	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	0207_MW003_201021	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271) - continued									
EB2027826-001	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	0207_MW003_201021	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.45	0.48	6.45	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.31	0.33	6.25	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.42	0.45	6.90	0% - 20%
EB2027835-001	0207_MW003_201021	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	96.7	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	0.02	µg/L	<0.02	0.2373 µg/L	93.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	108	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	99.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)								
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	111	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	94.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	112	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	108	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	101	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	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	96.7	67.0	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	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	100	64.2	133
EP231P: PFAS Sums (QCLot: 3327271)								
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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	102	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	104	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	114	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	103	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	91.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	119	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	114	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	107	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	97.4	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	100	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	100	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	115	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	99.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	108	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	113	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	103	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271) - continued							
EB2027831-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	107	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	120	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	108	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	108	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	112	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	123	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2027835**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Site	: ----	Issue Date	: 28-Oct-2020
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW003_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW003_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW003_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW003_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW003_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓

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	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**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	: **EB2027838**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: +[redacted]
Facsimile	: [redacted]	Facsimile	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 23-Oct-2020 12:45	Issue Date	: 23-Oct-2020
Client Requested Due Date	: 29-Oct-2020	Scheduled Reporting Date	: **29-Oct-2020**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 1.6°C, 1.3°C, 1.9°C - Ice present
Receipt Detail	: Medium hard 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
- 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.

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	*Client sampling date / time*	*Client sample ID*	WATER - EA025H Suspended Solids - Standard Level	WATER - EP002 Dissolved Organic Carbon (DOC)	WATER - EP231X PFAS - Full Suite (28 analytes)	WATER - NT-01 & 02 Ca, Mg, Na, K, Cl, SO4, Alkalinity
EB2027838-001	21-Oct-2020 00:00	0207_MW295_201021			✓	
EB2027838-002	21-Oct-2020 00:00	0207_MW269_201021	✓	✓	✓	✓

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	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	
- EDI Format - XTab (XTAB)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2027838**	Page	: 1 of 8
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020 12:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 24-Oct-2020
C-O-C number	: ----	Issue Date	: 29-Oct-2020 14:01
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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.

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.

[redacted]	Senior Organic Chemist	Brisbane Organics, Stafford, QLD
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Senior Inorganic 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 Contact 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.
- EP231X-INJ PFAS by LCMSMS: Sample '0207_MW295_201021' has been tested to the legacy QSM 5.1 aligned, NATA accredited method due to sample matrix being unsuitable for SPE extraction (high sediment content).
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- 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.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW295_201021	0207_MW269_201021	----	----	----
				21-Oct-2020 00:00	21-Oct-2020 00:00	----	----	----
				EB2027838-001	EB2027838-002	--------	--------	--------
				Result	Result	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	----	**118**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	**278**	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	**43**	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	<1	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	----	**321**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	**4**	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	----	**193**	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	**59**	----	----	----
Magnesium	7439-95-4	1	mg/L	----	<1	----	----	----
Sodium	7440-23-5	1	mg/L	----	**156**	----	----	----
Potassium	7440-09-7	1	mg/L	----	**18**	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	----	**11.9**	----	----	----
ø Total Cations	----	0.01	meq/L	----	**10.2**	----	----	----
ø Ionic Balance	----	0.01	%	----	**7.91**	----	----	----
EP002: Dissolved Organic Carbon (DOC)								
Dissolved Organic Carbon	----	1	mg/L	----	**22**	----	----	----
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	0.02	µg/L	<0.02	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW295_201021	0207_MW269_201021	----	----	----
				21-Oct-2020 00:00	21-Oct-2020 00:00	----	----	----
				EB2027838-001	EB2027838-002	--------	--------	--------
				Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
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	0.02	µg/L	----	**0.04**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	**0.04**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L	<0.10	----	----	----	----
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	----	----	----	----
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	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW295_201021	0207_MW269_201021	----	----	----
				21-Oct-2020 00:00	21-Oct-2020 00:00	----	----	----
				EB2027838-001	EB2027838-002	--------	--------	--------
				Result	Result	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
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	----	----	----	----
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	----	----	----	----
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	----	----	----
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	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW295_201021	0207_MW269_201021	----	----	----
				21-Oct-2020 00:00	21-Oct-2020 00:00	----	----	----
				EB2027838-001	EB2027838-002	--------	--------	--------
				Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
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	**0.25**	----	----	----	----
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	----	----	----	----
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	**0.25**	----	----	----	----
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	**0.25**	----	----	----	----
Sum of PFAS	----	0.01	µg/L	----	**0.08**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	**0.08**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	**0.08**	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	----	**103**	----	----	----
13C4-PFOS	----	0.02	%	**86.0**	----	----	----	----
13C8-PFOA	----	0.02	%	----	**100**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW295_201021	0207_MW269_201021	----	----	----
				21-Oct-2020 00:00	21-Oct-2020 00:00	----	----	----
				EB2027838-001	EB2027838-002	--------	--------	--------
				Result	Result	----	----	----
EP231S: PFAS Surrogate - Continued								
13C8-PFOA	----	0.02	%	**98.1**	**----**	**----**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
		Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2027838**	Page	: 1 of 12
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Order number	: 60612563 2.1	Date Analysis Commenced	: 24-Oct-2020
C-O-C number	: ----	Issue Date	: 29-Oct-2020
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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

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.

[redacted]	Senior Organic Chemist	Brisbane Organics, Stafford, QLD
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Senior Inorganic 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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 3331701)									
EB2028004-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	50	52	3.94	0% - 50%
EB2027793-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	114	116	1.52	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 3326850)									
EB2027818-008	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	41	42	0.00	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	41	42	0.00	0% - 20%
EB2027818-018	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2	3	62.3	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	2	3	62.3	No Limit
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 3328799)									
EB2027623-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	754	751	0.506	0% - 20%
EB2027796-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	11	11	0.00	0% - 50%
ED045G: Chloride by Discrete Analyser (QC Lot: 3328800)									
EB2027623-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	9550	9580	0.292	0% - 20%
EB2027796-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	198	199	0.00	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 3326602)									
EB2027806-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	107	105	1.42	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	55	55	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	224	222	0.581	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	16	16	0.00	0% - 50%
ET2004131-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	10	10	0.00	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	5	5	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
ED093F: Dissolved Major Cations (QC Lot: 3326602) - continued									
ET2004131-002	Anonymous	ED093F: Sodium	7440-23-5	1	mg/L	15	15	0.00	0% - 50%
		ED093F: Potassium	7440-09-7	1	mg/L	3	3	0.00	No Limit
EP002: Dissolved Organic Carbon (DOC) (QC Lot: 3327783)									
EB2025219-001	Anonymous	EP002: Dissolved Organic Carbon	----	1	mg/L	11	7	43.9	No Limit
EB2027817-003	Anonymous	EP002: Dissolved Organic Carbon	----	1	mg/L	7	5	29.4	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.04	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.25	0.27	5.50	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3330399)									
EB2027817-019	Anonymous	EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	16.3	16.3	0.184	0% - 20%
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	1.16	1.00	14.8	0% - 50%
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	1.12	1.07	4.57	0% - 50%
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	6.55	5.84	11.5	0% - 20%
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.46	0.47	2.15	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.10	<0.10	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271) - continued									
EB2027826-001	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3330399)									
EB2027817-019	Anonymous	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.68	0.59	14.2	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.65	0.53	20.3	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.55	1.33	15.3	0% - 50%
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.38	0.30	23.5	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.25	<0.25	0.00	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.50	<0.50	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327271) - continued									
EB2027826-001	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3330399)									
EB2027817-019	Anonymous	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.25	<0.25	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.25	<0.25	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.25	<0.25	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.25	<0.25	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271) - continued									
EB2027835-001	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3330399)									
EB2027817-019	Anonymous	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.10	<0.10	0.00	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.10	<0.10	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.45	0.48	6.45	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.31	0.33	6.25	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.42	0.45	6.90	0% - 20%
EB2027835-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3330399)									
EB2027817-019	Anonymous	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	28.8	27.4	5.05	0% - 20%
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	22.8	22.1	3.16	0% - 20%
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	27.3	25.9	5.19	0% - 20%

Method Blank (MB) and Laboratory Control Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 3331701)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	99.5	88.0	112
				<5	1000 mg/L	103	88.0	112
				<5	951 mg/L	107	87.2	116
ED037P: Alkalinity by PC Titrator (QCLot: 3326850)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	50 mg/L	93.2	80.0	120
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 3328799)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	103	85.0	118
				<1	100 mg/L	93.1	85.0	118
ED045G: Chloride by Discrete Analyser (QCLot: 3328800)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	99.0	90.0	115
				<1	1000 mg/L	107	90.0	115
ED093F: Dissolved Major Cations (QCLot: 3326602)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	100	70.0	130
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	102	70.0	130
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	98.9	70.0	130
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	99.2	70.0	130
EP002: Dissolved Organic Carbon (DOC) (QCLot: 3327783)								
EP002: Dissolved Organic Carbon	----	1	mg/L	<1	10 mg/L	89.2	80.0	112
				<1	100 mg/L	96.6	80.0	112
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	96.7	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	0.02	µg/L	<0.02	0.2373 µg/L	93.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	108	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	99.0	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3330399)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	121	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	112	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.475 µg/L	104	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	99.8	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	92.3	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	91.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271) - continued								
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	111	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	94.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	112	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3330399)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	92.0	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	93.0	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	105	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	109	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	107	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	99.6	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	109	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	108	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	107	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	101	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	96.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	108	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	101	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.8	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3330399)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	97.2	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	120	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	Recovery Limits (%): Low	Recovery Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3330399) - continued								
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	97.8	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	96.6	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	88.8	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	96.8	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	87.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	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	96.7	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	100	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3330399)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	99.4	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	100	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	87.5	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	96.5	62.2	139
EP231P: PFAS Sums (QCLot: 3327271)								
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: 3330399)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: 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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 3328799)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 3328799) - continued							
EB2027623-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	20 mg/L	# Not Determined	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 3328800)							
EB2027623-002	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	# Not Determined	70.0	130
EP002: Dissolved Organic Carbon (DOC) (QCLot: 3327783)							
EB2025220-001	Anonymous	EP002: Dissolved Organic Carbon	----	100 mg/L	85.4	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	102	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	104	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	114	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	103	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	91.2	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3330399)							
EB2027817-030	Anonymous	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.443 µg/L	120	70.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.47 µg/L	104	70.0	130
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.475 µg/L	107	70.0	130
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	94.5	70.0	130
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	89.0	70.0	130
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	96.7	70.0	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	119	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	114	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	107	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	97.4	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	100	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	100	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	115	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	99.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	108	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3330399)							
EB2027817-030	Anonymous	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	93.3	70.0	130
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	86.6	70.0	130
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	94.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3330399) - continued							
EB2027817-030	Anonymous	EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	101	70.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	101	70.0	130
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	95.2	70.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	105	70.0	130
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	103	70.0	130
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	103	70.0	130
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	95.0	70.0	130
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	94.4	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	113	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	102	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	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	107	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	120	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	108	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3330399)							
EB2027817-030	Anonymous	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	94.4	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	104	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	87.1	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	102	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	98.2	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	85.4	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	85.8	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	108	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	112	67.0	138

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271) - continued							
EB2027831-001	Anonymous	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	123	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3330399)							
EB2027817-030	Anonymous	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.468 µg/L	100	70.0	130
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.475 µg/L	97.0	70.0	130
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	92.3	70.0	130
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	123	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2027838**	Page	: 1 of 6
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Site	: ----	Issue Date	: 29-Oct-2020
Sampler	: ----	No. of samples received	: 2
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EB2027623--002	Anonymous	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
ED045G: Chloride by Discrete Analyser	EB2027623--002	Anonymous	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

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*
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025H)							
0207_MW269_201021	**21-Oct-2020**	**----**	----	----	**28-Oct-2020**	28-Oct-2020	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P)							
0207_MW269_201021	**21-Oct-2020**	**----**	----	----	**26-Oct-2020**	04-Nov-2020	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G)							
0207_MW269_201021	**21-Oct-2020**	**----**	----	----	**26-Oct-2020**	18-Nov-2020	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G)							
0207_MW269_201021	**21-Oct-2020**	**----**	----	----	**26-Oct-2020**	18-Nov-2020	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Natural (ED093F)							
0207_MW269_201021	**21-Oct-2020**	**----**	----	----	**24-Oct-2020**	28-Oct-2020	✓
EP002: Dissolved Organic Carbon (DOC)							
Amber DOC Filtered- Sulfuric Preserved (EP002)							
0207_MW269_201021	**21-Oct-2020**	**----**	----	----	**26-Oct-2020**	18-Nov-2020	✓

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) 0207_MW269_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ) 0207_MW295_201021	**21-Oct-2020**	**27-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW269_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ) 0207_MW295_201021	**21-Oct-2020**	**27-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW269_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ) 0207_MW295_201021	**21-Oct-2020**	**27-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW269_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ) 0207_MW295_201021	**21-Oct-2020**	**27-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW269_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
HDPE (no PTFE) (EP231X-INJ) 0207_MW295_201021	**21-Oct-2020**	**27-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓

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)							
Alkalinity by PC Titrator	ED037-P	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Organic Carbon	EP002	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by PC Titrator	ED037-P	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Organic Carbon	EP002	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	3	12	**25.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chloride by Discrete Analyser	ED045G	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Organic Carbon	EP002	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Chloride by Discrete Analyser	ED045G	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Organic Carbon	EP002	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	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
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions the librated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm APHA seal method 2 017-1-L
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM Schedule B(3)
Dissolved Organic Carbon	EP002	WATER	In house: Referenced to APHA 5310 B. This method is compliant with NEPM Schedule B(3). Samples are combusted at high termperature in the presence of an oxidative catalyst. The evolved carbon dioxide is quantified using an IR detector.
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.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. 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.

Preparation Methods	Method	Matrix	Method Descriptions
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
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.

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2027840**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted] 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 23-Oct-2020 12:45	Issue Date	: 23-Oct-2020
Client Requested Due Date	: 29-Oct-2020	Scheduled Reporting Date	: **29-Oct-2020**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 1.6°C, 1.3°C, 1.9°C - Ice present
Receipt Detail	: Medium hard 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
- 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.

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	Client sampling date / time	Client sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2027840-001	21-Oct-2020 00:00	0207_MW151_201021	✓

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]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

[redacted]

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2027840**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020 12:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020 17:12
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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.

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.

[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 Contact 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: WATER (Matrix: WATER)				0207_MW151_201021	----	----	----	----
				21-Oct-2020 00:00	----	----	----	----
				EB2027840-001	--------	--------	--------	--------
				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	0.02	µg/L	<0.02	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW151_201021	----	----	----	----
				21-Oct-2020 00:00	----	----	----	----
				EB2027840-001	--------	--------	--------	--------
				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	<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	%	**104**	----	----	----	----
13C8-PFOA	----	0.02	%	**102**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
		Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2027840**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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

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.

[redacted]t	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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.04	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.25	0.27	5.50	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271) - continued									
EB2027835-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271) - continued									
EB2027826-001	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.45	0.48	6.45	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.31	0.33	6.25	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.42	0.45	6.90	0% - 20%
EB2027835-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	96.7	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	0.02	µg/L	<0.02	0.2373 µg/L	93.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	108	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	99.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)								
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	111	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	94.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	112	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	108	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	101	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	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	96.7	67.0	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	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	100	64.2	133
EP231P: PFAS Sums (QCLot: 3327271)								
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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	102	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	104	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	114	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	103	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	91.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	119	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	114	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	107	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	97.4	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	100	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	100	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	115	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	99.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	108	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	113	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	103	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271) - continued							
EB2027831-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	107	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	120	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	108	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	108	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	112	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	123	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2027840**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Site	: ----	Issue Date	: 28-Oct-2020
Sampler	: ----	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW151_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW151_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW151_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW151_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW151_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓

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	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**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 : **EB2027841**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: +[redacted]	Telephone	: [redacted]
Facsimile	: +6[redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 23-Oct-2020 12:45	Issue Date	: 23-Oct-2020
Client Requested Due Date	: 29-Oct-2020	Scheduled Reporting Date	: **29-Oct-2020**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 1.6°C, 1.3°C, 1.9°C - Ice present
Receipt Detail	: Medium hard 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
- 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.

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	Client sampling date / time	Client sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2027841-001	21-Oct-2020 00:00	0207_MW147_201021	✓

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]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ENMRG (ENMRG) Email
- EDI Format - ESDAT (ESDAT) Email
- EDI Format - XTab (XTAB) Email

[redacted]

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2027841**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020 12:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020 17:17
Sampler	[redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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.

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.

[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 Contact 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: WATER (Matrix: WATER)				0207_MW147_201021	----	----	----	----
				21-Oct-2020 00:00	----	----	----	----
				EB2027841-001	--------	--------	--------	--------
				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	0.02	µg/L	<0.02	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW147_201021	----	----	----	----
				21-Oct-2020 00:00	----	----	----	----
				EB2027841-001	--------	--------	--------	--------
				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	<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	%	**93.1**	----	----	----	----
13C8-PFOA	----	0.02	%	**101**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
		Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2027841**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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

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.

[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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.04	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.25	0.27	5.50	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271) - continued									
EB2027835-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271) - continued									
EB2027826-001	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.45	0.48	6.45	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.31	0.33	6.25	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.42	0.45	6.90	0% - 20%
EB2027835-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	96.7	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	0.02	µg/L	<0.02	0.2373 µg/L	93.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	108	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	99.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)								
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	111	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	94.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	112	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	108	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	101	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	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	96.7	67.0	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	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	100	64.2	133
EP231P: PFAS Sums (QCLot: 3327271)								
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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	102	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	104	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	114	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	103	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	91.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	119	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	114	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	107	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	97.4	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	100	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	100	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	115	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	99.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	108	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	113	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	103	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271) - continued							
EB2027831-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	107	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	120	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	108	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	108	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	112	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	123	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2027841**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Site	: ----	Issue Date	: 28-Oct-2020
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW147_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW147_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW147_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW147_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW147_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓

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	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**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 : **EB2027842**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: +[redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 23-Oct-2020 12:45	Issue Date	: 23-Oct-2020
Client Requested Due Date	: 29-Oct-2020	Scheduled Reporting Date	: **29-Oct-2020**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 1.6°C, 1.3°C, 1.9°C - Ice present
Receipt Detail	: Medium hard 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
- 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.

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	Client sampling date / time	Client sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2027842-001	21-Oct-2020 00:00	0207_MW134_201021	✓

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]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2027842**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020 12:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020 17:21
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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.

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.

[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 Contact 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: WATER (Matrix: WATER)				0207_MW134_201021	----	----	----	----
				21-Oct-2020 00:00	----	----	----	----
				EB2027842-001	--------	--------	--------	--------
				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	0.02	µg/L	**0.05**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.04**	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW134_201021	----	----	----	----
				21-Oct-2020 00:00	----	----	----	----
				EB2027842-001	--------	--------	--------	--------
				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	**0.09**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.09**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.09**	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**94.1**	----	----	----	----
13C8-PFOA	----	0.02	%	**100**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
		Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2027842**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: [redacted]
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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

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.

[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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.04	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.25	0.27	5.50	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271) - continued									
EB2027835-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271) - continued									
EB2027826-001	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.45	0.48	6.45	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.31	0.33	6.25	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.42	0.45	6.90	0% - 20%
EB2027835-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	96.7	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	0.02	µg/L	<0.02	0.2373 µg/L	93.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	108	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	99.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)								
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	111	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	94.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	112	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	108	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	101	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	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	96.7	67.0	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	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	100	64.2	133
EP231P: PFAS Sums (QCLot: 3327271)								
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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	102	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	104	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	114	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	103	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	91.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	119	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	114	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	107	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	97.4	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	100	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	100	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	115	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	99.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	108	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	113	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	103	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271) - continued							
EB2027831-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	107	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	120	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	108	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	108	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	112	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	123	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2027842**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Site	: ----	Issue Date	: 28-Oct-2020
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW134_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW134_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW134_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW134_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW134_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓

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	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**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 : **EB2027843**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: +[redacted]	Telephone	: +[redacted]
Facsimile	: +[redacted]	Facsimile	: +[redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 23-Oct-2020 12:45	Issue Date	: 23-Oct-2020
Client Requested Due Date	: 29-Oct-2020	Scheduled Reporting Date	: **29-Oct-2020**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 1.6°C, 1.3°C, 1.9°C - Ice present
Receipt Detail	: Medium hard 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
- 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.

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	Client sampling date / time	Client sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2027843-001	21-Oct-2020 00:00	0207_MW038_201021	✓

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]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
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- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2027843**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020 12:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020 17:21
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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.

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.

[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 Contact 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: WATER (Matrix: WATER)				0207_MW038_201021	----	----	----	----
				21-Oct-2020 00:00	----	----	----	----
				EB2027843-001	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.03**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.03**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	**0.18**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.38**	----	----	----	----
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	**0.04**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.02**	----	----	----	----
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)				0207_MW038_201021	----	----	----	----
				21-Oct-2020 00:00	----	----	----	----
				EB2027843-001	--------	--------	--------	--------
				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	**0.68**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.56**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.65**	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**95.4**	----	----	----	----
13C8-PFOA	----	0.02	%	**102**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
		Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2027843**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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

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.

[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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.04	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.25	0.27	5.50	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271) - continued									
EB2027835-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271) - continued									
EB2027826-001	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.45	0.48	6.45	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.31	0.33	6.25	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.42	0.45	6.90	0% - 20%
EB2027835-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	96.7	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	0.02	µg/L	<0.02	0.2373 µg/L	93.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	108	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	99.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)								
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	111	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	94.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	112	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	108	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	101	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	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	96.7	67.0	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	100	64.2	133
EP231P: PFAS Sums (QCLot: 3327271)								
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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
				Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	102	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	104	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	114	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	103	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	91.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	119	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	114	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	107	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	97.4	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	100	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	100	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	115	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	99.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	108	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	113	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	103	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271) - continued							
EB2027831-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	107	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	120	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	108	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	108	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	112	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	123	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2027843**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Site	: ----	Issue Date	: 28-Oct-2020
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW038_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW038_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW038_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW038_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW038_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓

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	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**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.

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2027844**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 23-Oct-2020 12:45	Issue Date	: 23-Oct-2020
Client Requested Due Date	: 29-Oct-2020	Scheduled Reporting Date	: **29-Oct-2020**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 1.6°C, 1.3°C, 1.9°C - Ice present
Receipt Detail	: Medium hard 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
- 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.

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	Client sampling date / time	Client sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2027844-001	21-Oct-2020 00:00	0207_MW019_201021	✓

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]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
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- EDI Format - XTab (XTAB) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
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- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
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- EDI Format - ENMRG (ENMRG) — Email
- EDI Format - ESDAT (ESDAT) — Email
- EDI Format - XTab (XTAB) — Email

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2027844**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020 12:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020 17:25
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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.

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.

[redacted]	2IC 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 Contact 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: WATER (Matrix: WATER)				0207_MW019_201021	----	----	----	----
				21-Oct-2020 00:00	----	----	----	----
				EB2027844-001	--------	--------	--------	--------
				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	0.02	µg/L	**0.03**	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				0207_MW019_201021	----	----	----	----
				21-Oct-2020 00:00	----	----	----	----
				EB2027844-001	--------	--------	--------	--------
				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	**0.03**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.03**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.03**	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**111**	----	----	----	----
13C8-PFOA	----	0.02	%	**100**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
		Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2027844**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 23-Oct-2020
Order number	: 60612563 2.1	Date Analysis Commenced	: 26-Oct-2020
C-O-C number	: ----	Issue Date	: 28-Oct-2020
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
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. 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

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.

[redacted]	2IC 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

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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.04	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.25	0.27	5.50	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3327271) - continued									
EB2027835-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3327271) - continued									
EB2027826-001	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2027835-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3327271)									
EB2027826-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.45	0.48	6.45	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.31	0.33	6.25	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.42	0.45	6.90	0% - 20%
EB2027835-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	96.7	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	0.02	µg/L	<0.02	0.2373 µg/L	93.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	108	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	99.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)								
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	111	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	94.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	94.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	112	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	108	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	101	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	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	96.7	67.0	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	100	64.2	133
EP231P: PFAS Sums (QCLot: 3327271)								
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	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
				Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	102	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	104	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	114	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	103	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	91.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	119	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	114	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	107	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	97.4	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	100	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	100	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	115	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	99.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	108	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	113	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	103	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3327271) - continued							
EB2027831-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	107	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	120	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	108	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3327271)							
EB2027831-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	108	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	112	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	123	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2027844**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: [redacted]	Date Samples Received	: 23-Oct-2020
Site	: ----	Issue Date	: 28-Oct-2020
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW019_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW019_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW019_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW019_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW019_201021	**21-Oct-2020**	**26-Oct-2020**	19-Apr-2021	✓	**27-Oct-2020**	19-Apr-2021	✓

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	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**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.

Australian Government
Department of Industry, Science, Energy and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: LEVEL 8
[redacted]

Email: [redacted]

Telephone:

Fax:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: [redacted]

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

Fax:

SAMPLE DETAILS

NMI Job Name: AECO06/201027

Total No. of Samples: 6

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N20/025335	3-NOV-2020	0207_QC231_201019	WATER 19/10/20
N20/025336	3-NOV-2020	0207_QC232_201020	WATER 20/10/20
N20/025337	3-NOV-2020	0207_QC233_201020	WATER 20/10/20
N20/025338	3-NOV-2020	0207_QC234_201020	WATER 20/10/20
N20/025339	3-NOV-2020	0207_QC235_201021	WATER 21/10/20
N20/025340	3-NOV-2020	0207_QC236_201022	WATER 22/10/20

SAMPLE RECEIVED CONDITION

Date samples received:	27-OCT-2020
Sample received in good order:	Yes
NMI Quotation no. provided:	
Client purchase order number:	60612563_2_1
Temperature of samples:	Chilled
Comments:	ALL OK
Mode of Delivery:	Courier

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

REPORT OF ANALYSIS

Report No. RN1292789

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/201027
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_2_1
		Date Received	: 27-OCT-2020
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0207_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N20/025335	0207_QC231_201019	WATER 19/10/20
N20/025336	0207_QC232_201020	WATER 20/10/20
N20/025337	0207_QC233_201020	WATER 20/10/20
N20/025338	0207_QC234_201020	WATER 20/10/20

Lab Reg No.		N20/025335	N20/025336	N20/025337	N20/025338	
Date Sampled		19-OCT-2020	20-OCT-2020	20-OCT-2020	20-OCT-2020	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05	0.31	<0.05	3.0	NR70
PFPeA (2706-90-3)	ug/L	<0.02	0.99	<0.02	1.9	NR70
PFHxA (307-24-4)	ug/L	<0.01	0.96	0.042	6.8	NR70
PFHpA (375-85-9)	ug/L	<0.01	0.54	<0.01	1.8	NR70
PFOA (335-67-1)	ug/L	<0.01	0.51	<0.01	2.7	NR70
PFNA (375-95-1)	ug/L	<0.01	0.099	<0.01	0.038	NR70
PFDA (335-76-2)	ug/L	<0.01	0.012	<0.01	<0.01	NR70
PFUdA (2058-94-8)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)	ug/L	<0.01	0.21	0.027	2.6	NR70
PFHxS (355-46-4)	ug/L	<0.01	2.3	0.19	14	NR70
PFHpS (375-92-8)	ug/L	<0.01	0.10	<0.01	1.1	NR70
PFOS (1763-23-1)	ug/L	<0.02	1.6	0.11	17	NR70
PFNS (68259-12-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)	ug/L	<0.01	0.23	0.028	3.0	NR70
PFOSA (754-91-6)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.		N20/025335	N20/025336	N20/025337	N20/025338	
Date Sampled		19-OCT-2020	20-OCT-2020	20-OCT-2020	20-OCT-2020	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
N-EtFOSE (1691-99-2)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)	ug/L	<0.01	0.34	0.012	0.13	NR70
8:2 FTS (39108-34-4)	ug/L	<0.01	<0.01	<0.01	0.037	NR70
10:2 FTS (120226-60-0)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)	%	100	103	105	113	NR70
PFPeA (Surrogate Recovery)	%	109	92	108	91	NR70
PFHxA (Surrogate Recovery)	%	125	105	106	84	NR70
PFHpA (Surrogate Recovery)	%	124	99	99	107	NR70
PFOA (Surrogate Recovery)	%	110	103	103	96	NR70
PFNA (Surrogate Recovery)	%	101	117	94	86	NR70
PFDA (Surrogate Recovery)	%	103	115	92	99	NR70
PFUdA (Surrogate Recovery)	%	89	108	103	97	NR70
PFDoA (Surrogate Recovery)	%	92	110	95	92	NR70
PFTeDA (Surrogate Recovery)	%	73	95	87	83	NR70
PFHxDA (Surrogate Recovery)	%	111	106	106	112	NR70
FOUEA (Surrogate Recovery)	%	93	84	79	89	NR70
PFBS (Surrogate Recovery)	%	117	109	109	103	NR70
PFHxS (Surrogate Recovery)	%	113	106	103	86	NR70
PFOS (Surrogate Recovery)	%	105	100	99	90	NR70
PFOSA (Surrogate Recovery)	%	98	88	79	78	NR70
N-MeFOSA (Surrogate Recovery)	%	80	77	86	81	NR70
N-EtFOSA (Surrogate Recovery)	%	65	81	69	104	NR70
N-MeFOSAA (Surrogate Recovery)	%	84	91	81	81	NR70
N-EtFOSAA (Surrogate Recovery)	%	84	121	87	90	NR70
N-MeFOSE (Surrogate Recovery)	%	81	110	88	65	NR70
N-EtFOSE (Surrogate Recovery)	%	82	96	135	68	NR70
4:2 FTS (Surrogate Recovery)	%	86	78	82	80	NR70
6:2 FTS (Surrogate Recovery)	%	98	91	77	84	NR70
8:2 FTS (Surrogate Recovery)	%	79	91	79	71	NR70
8:2 diPAP (Surrogate Recovery)	%	106	107	111	117	NR70
Dates						
Date extracted		27-OCT-2020	27-OCT-2020	27-OCT-2020	27-OCT-2020	
Date analysed		29-OCT-2020	29-OCT-2020	29-OCT-2020	29-OCT-2020	

N20/025335
to
N20/025340

REPORT OF ANALYSIS

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

[redacted]t
Organics - NSW
Accreditation No. 198

03-NOV-2020

REPORT OF ANALYSIS

Report No. RN1292789

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/201027
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_2_1
		Date Received	: 27-OCT-2020
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0207_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N20/025339	0207_QC235_201021	WATER 21/10/20
N20/025340	0207_QC236_201022	WATER 22/10/20

Lab Reg No.		N20/025339	N20/025340			
Date Sampled		21-OCT-2020	22-OCT-2020			
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05	0.40			NR70
PFPeA (2706-90-3)	ug/L	0.020	0.62			NR70
PFHxA (307-24-4)	ug/L	0.078	2.2			NR70
PFHpA (375-85-9)	ug/L	<0.01	0.44			NR70
PFOA (335-67-1)	ug/L	0.011	0.74			NR70
PFNA (375-95-1)	ug/L	<0.01	0.015			NR70
PFDA (335-76-2)	ug/L	<0.01	<0.01			NR70
PFUdA (2058-94-8)	ug/L	<0.01	<0.01			NR70
PFDoA (307-55-1)	ug/L	<0.01	<0.01			NR70
PFTrDA (72629-94-8)	ug/L	<0.02	<0.02			NR70
PFTeDA (376-06-7)	ug/L	<0.02	<0.02			NR70
PFHxDA (67905-19-5)	ug/L	<0.02	<0.02			NR70
PFODA (16517-11-6)	ug/L	<0.05	<0.05			NR70
FOUEA (70887-84-2)	ug/L	<0.01	<0.01			NR70
PFDS (335-77-3)	ug/L	<0.01	<0.01			NR70
PFPeS (2706-91-4)	ug/L	0.050	1.4			NR70
PFHxS (355-46-4)	ug/L	0.37	8.8			NR70
PFHpS (375-92-8)	ug/L	<0.01	0.40			NR70
PFOS (1763-23-1)	ug/L	0.14	4.3			NR70
PFNS (68259-12-1)	ug/L	<0.01	<0.01			NR70
PFBS (375-73-5)	ug/L	0.051	1.5			NR70
PFOSA (754-91-6)	ug/L	<0.01	<0.01			NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02	<0.02			NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02	<0.02			NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01	<0.01			NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01	<0.01			NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05	<0.05			NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05	<0.05			NR70
4:2 FTS (757124-72-4)	ug/L	<0.01	<0.01			NR70

REPORT OF ANALYSIS

Lab Reg No.		N20/025339	N20/025340			
Date Sampled		21-OCT-2020	22-OCT-2020			
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
6:2 FTS (27619-97-2)	ug/L	<0.01	0.047			NR70
8:2 FTS (39108-34-4)	ug/L	<0.01	<0.01			NR70
10:2 FTS (120226-60-0)	ug/L	<0.01	<0.01			NR70
8:2 diPAP (678-41-1)	ug/L	<0.02	<0.02			NR70
PFBA (Surrogate Recovery)	%	109	101			NR70
PFPeA (Surrogate Recovery)	%	102	100			NR70
PFHxA (Surrogate Recovery)	%	108	101			NR70
PFHpA (Surrogate Recovery)	%	113	103			NR70
PFOA (Surrogate Recovery)	%	117	109			NR70
PFNA (Surrogate Recovery)	%	120	88			NR70
PFDA (Surrogate Recovery)	%	125	99			NR70
PFUdA (Surrogate Recovery)	%	117	103			NR70
PFDoA (Surrogate Recovery)	%	112	81			NR70
PFTeDA (Surrogate Recovery)	%	105	90			NR70
PFHxDA (Surrogate Recovery)	%	117	110			NR70
FOUEA (Surrogate Recovery)	%	94	91			NR70
PFBS (Surrogate Recovery)	%	116	105			NR70
PFHxS (Surrogate Recovery)	%	110	89			NR70
PFOS (Surrogate Recovery)	%	100	105			NR70
PFOSA (Surrogate Recovery)	%	101	88			NR70
N-MeFOSA (Surrogate Recovery)	%	93	89			NR70
N-EtFOSA (Surrogate Recovery)	%	97	73			NR70
N-MeFOSAA (Surrogate Recovery)	%	100	83			NR70
N-EtFOSAA (Surrogate Recovery)	%	110	76			NR70
N-MeFOSE (Surrogate Recovery)	%	85	68			NR70
N-EtFOSE (Surrogate Recovery)	%	93	74			NR70
4:2 FTS (Surrogate Recovery)	%	80	79			NR70
6:2 FTS (Surrogate Recovery)	%	90	83			NR70
8:2 FTS (Surrogate Recovery)	%	95	71			NR70
8:2 diPAP (Surrogate Recovery)	%	113	105			NR70
Dates						
Date extracted		27-OCT-2020	27-OCT-2020			
Date analysed		29-OCT-2020	29-OCT-2020			

[redacted]
Organics - NSW
Accreditation No. 198

03-NOV-2020

REPORT OF ANALYSIS

NATA
ACCREDITED FOR
TECHNICAL
COMPETENCE

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

This Report supersedes reports: *RN1292783*

Measurement Uncertainty is available upon request.
Chemical Accreditation 198: 105 Delhi Road, North Ryde, NSW, 2113

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/201027 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	109	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	106	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	100	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	110	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	88	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	81	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	101	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	106	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	102	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	103	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	113	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	100	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	95	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	91	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	90	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	94	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	114	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	113	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	119	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	105	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	70	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	91	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	110	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	126	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	121	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	107	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	109	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date: **30/10/2020**

Appendix F

Equipment Calibration Certificates

Appendix F Equipment Calibration Certificates

AirMet Scientific P/L
7-11 Ceylon Street
Nunawading
VIC 3131, Australia
Tel: 03 8878 3300
Fax: 03 8878 3344

Calibration Certificate

This document certifies that the instrument detailed has been calibrated to the parameters

Certificate Print Date: 16-Oct-2020
Calibration Date: 16-Oct-2020
Next Calibration Due: 16-Oct-2021

Call ID / Order No: 245224
Job No / Pack No: S2452240001

Customer: Airmet Scientific - Brisbane **Serial No:** 15M102231
Description: YSI Professional Plus hand held unit only. In

Calibration Summary

Frequency: 365 Days **Temp:** 22°C **As Found:** Out of Tolerance **Result:** Pass
Humidity: 45% **Certificate:** S2452240001

Desc	As Found Actual	As Found Result	As Left (Cal Status) Actual	As Left (Cal Status) Result
pH4	4.09	Pass	4.0	Pass
pH7	7.02	Pass	7.0	Pass
Conductivity uS/cm	2370.0	Fail	2533.0	Pass
ORP mV	224.6	Pass	238.4	Pass
DO Zero	0.2	Fail	0.0	Pass
DO %	101.8	Pass	100.0	Pass

Standard Used

Equip ID	Description	Valid Until	Cert
343511	Sp-Cond 2760 @ 25C	15/04/2021	
10640	Sodium Sulphite for Zero DO2	31/08/2021	
355072	pH = 7.00 +/- 0.02 @ 25.C	30/11/2021	
357173	Zobel B:1/50 mole K4Fe(CN) 6 in 0.1 molar KCl	30/07/2021	
357172	Zobel A: 1/50 mole K3Fe(CN) 6 in 0.1 molar KCl	30/07/2021	
351412	pH4 = 4.01 +/- 0.02 @ 25 deg	17/09/2021	

Completed By: Braeden Curtis **Signed:**

Oil / Water Interface Meter

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument **Interface Meter (100M)**
Serial No. **288017**

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
	above 7.9V		
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: **Shannon Brown**

Test date: **6/10/2020**

Next Test due: **4/04/2021**

Prepared for
Department of Defence
ABN: 68706814312

Sampling Event Factual Report, March / April 2021

PFAS OMP - Army Aviation Centre Oakey

03-Aug-2021
Doc No. 60612563_RP_030_0_210803

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Delivering a better world

Sampling Event Factual Report, March / April 2021

PFAS OMP - Army Aviation Centre Oakey

Client: Department of Defence

ABN: 68706814312

Prepared by

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street, PO Box 1307, Fortitude Valley QLD 4006, Australia
T +61 7 3056 4800 www.aecom.com
ABN 20 093 846 925

03-Aug-2021

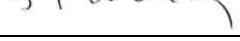
Job No.: 60612563

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 AS/NZS4801 and OHSAS18001.

Quality Information

Document	Sampling Event Factual Report, March / April 2021
Ref	60612563
Date	03-Aug-2021
Prepared by	Camden McCosker
Reviewed by	Frances Lee

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	03-Jun-2021	Draft for Client Review	James Peachey Associate Director	
B	20-Jul-2021	Draft for Client Review	James Peachey Associate Director	
0	03-Aug-2021	Final	James Peachey Associate Director	

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Abbreviations

Abbreviation	
AACO	Army Aviation Centre Oakey
AECOM	AECOM Australia Pty Ltd
ALS	Australian Laboratory Services
ASC NEPM	Assessment of Site Contamination National Environment Protection Measure 1999 (as amended 2013)
COC	Chain of Custody
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved oxygen
EC	Electrical conductivity
HEPA	Heads of Environmental Protection Agencies
IP	Interface probe
LNAPL	Light non aqueous phase liquid
LOR	Limit of reporting
mAHD	metres Australian height datum
mbtoc	Metres below top of casing
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NHMRC	National Health and Medical Research Council
NMI	National Measurement Institute
OMP	Ongoing management plan
ORP	Oxidation reduction potential
PFAS	Per- and poly-fluorinated alkyl substances
PFHxS	Perfluorohexane sulfonate
PFOA	Perflurooctanoic acid
PFOS	Perflurooctanesulfonic acid
PMAP	PFAS management area plan
QA/QC	Quality assurance / quality control
QLD	Queensland
RPD	Relative percent difference
SAQP	Sampling analysis and quality plan
SWL	Standing water level

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
	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)	2448-09-7
	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

Units of Measurement			
L	Litres	m	Metres
mg	Milligram	ha	Hectares
kg	Kilogram	µg	Microgram
mV	Millivolts		

1.0 Introduction

1.1 General

AECOM Australia Pty Ltd (AECOM) has been engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Program (OMP) (Defence, 2019) at the Army Aviation Centre Oakey (AACO) (the 'Site') and the AACO Management Area in the South Queensland Region. The OMP for AACO also includes groundwater sampling at the Brymaroo Satellite Site (Brymaroo), located approximately 25 km northwest of AACO. The locations of the Site, Brymaroo and the Management Area are shown in **Figure 1** and **Figure 2** in **Appendix A**. The OMP for AACO (Defence 2019) includes the following sampling events:

- Targeted groundwater sampling events in October 2019, October 2020 and October 2021
- Annual comprehensive sampling events in March/April 2020, April 2021 and April 2022 including groundwater, sediment and surface water sampling.

Following each comprehensive and targeted sampling event, sampling event factual reports will be prepared. Annual interpretative reports will be prepared following the completion of each 12-month sampling period. This sampling event factual report has been prepared to report the results of the comprehensive sampling event completed in March and April 2021, specifically highlighting first time detections and/or first-time exceedances of human health screening criteria for PFHxS+PFOS and / or PFOA.

This report has been prepared in accordance with the *PFAS OMP factual reports – interim guidance for preparation,* v0.2, May 2021 (Defence, 2021).

1.2 Objectives

The objectives of the OMP program are to:

- Implement the OMP prepared as part of the PFAS Management Area Plan (PMAP); and
- Collect data that will enable Defence to maintain an up to date understanding of the distribution, concentration and transport of PFAS at each property.

The data will assist in the timely identification of risks and inform Defence's approach to the management of PFAS, including updates and revisions to the PMAP.

The objective of this phase of works is to implement the scope of works for the Comprehensive March/April 2021 sampling event in accordance with the sampling and analysis quality plan (SAQP) (AECOM, 2021).

2.0 Scope of Work

The sampling event at AACO and Brymaroo was completed in general accordance with the SAQP (AECOM, 2021). In summary, the scope of works for this sampling event included:

- Obtaining access to private properties where some groundwater sampling locations are situated.
- Review of the SAQP prior to monitoring event to ensure compliance with the following:
  - PFAS National Environmental Management Plan (NEMP) (2020)
  - National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013 (ASC NEPM, 2013)
  - Defence Routine Environment Water Quality Monitoring Manual
  - AS/NZ 5667:1998 Water quality – Sampling
  - Australian and New Zealand Guidelines for Fresh and Marine Water Quality
  - Relevant State regulatory guidelines.
- Gauging of groundwater level in monitoring wells prior to collection of samples (refer to **Table 1** below, and **Figure 3**, **Figure 4** and **Figure 5** in **Appendix A** for specific locations).
- Collection of groundwater samples at 100 locations including 80 monitoring wells (34 at AACO, 13 at Brymaroo, and 33 located off-Site) and 20 off-Site residential bores (refer to **Table 1** below, and **Figure 3**, **Figure 4** and **Figure 5** in **Appendix A**). It is noted that groundwater samples from six monitoring wells could not be collected during this sampling event (refer to **Table 9** for details).
- Collection of co-located surface water and sediment samples at 22 locations including six on-Site and 16 off-Site locations (refer to **Table 2** and **Table 3** below, and **Figure 6** in **Appendix A**). It is noted that one surface water sample could not be collected during this sampling event (refer to **Table 11** for details).
  - Sampling of the nine on-base drainage channel locations was conducted on 23 March 2021 following a rain event to ensure these samples were collected. A functional water quality meter was not available and surface water field parameters were not able to be collected.
- Collecting intra- and inter-laboratory duplicate samples at a rate of 1 in 10 primary samples and collecting one rinsate sample per fieldwork day when re-usable (i.e. decontaminated) equipment was in use.
- Analysis of all samples for a suite of 28 PFAS analytes at the standard limit of reporting (LOR).
- Data management of all OMP field and laboratory data in the Defence ESdat database.
- Preparation of this Sampling Event Factual Report.

Table 1 Groundwater Sampling Locations

Location		Monitoring Wells / Residential Bores
Source Area Bores	Fire training area in the north of the Site	MW253, MW254
	Former fire station in B3	MW201, MW202, MW203, MW204, MW205
	Aqueous film forming foam (AFFF) Storage Area / D20 appliance testing area	MW221, MW222, MW230, MW232
	AFFF recovery tank in F1 / hot refuel area	MW235, MW236, MW241
	AFFF recovery tank in A2 / hot refuel area	MW172, MW173
	AFFF recovery tank in S1	MW299, MW300
	AFFF Settling tank in C1	MW193, MW198, MW206, MW223, MW229
On-Site boundary bores (Oakey Creek Alluvium)		MW167, MW174, MW178, MW179, MW187, MW189, MW233, MW242, MW245, MW249, MW252
Off-Site background bores (to east/ southeast of the Site)		MW265, MW279
Off-Site south of the Site and down gradient of drainage channels and Oakey Creek		MW267, MW268, MW270, MW278, MW292, MW294, *MW020, MW032, MW031, MW132*
Off-Site up and down gradient of landfill		MW280, MW281, MW282
Off-Site west and southwest of the Site		MW255, MW257, MW262, MW264, MW266, MW272, MW274, MW276, MW283, MW285, MW296, *MW003, MW019, MW021, MW022, MW038, MW056, MW113, MW114, MW118, MW122, MW134, MW147, MW149, MW151, MW157, MW160*
Off-Site underlying aquifers to south of the Site		MW271, MW275, MW288, MW269, MW273, MW289, MW290, MW291, MW293, MW295, MW297
Brymaroo		MW001, MW002, MW003, MW004, MW005, MW006, MW007, MW008, MW009, MW010, MW011, MW012, MW013

***Note**: Italics indicate residential bores.*

Table 2 Surface Water Sampling Locations

Area	Description	Surface Water Sampling Locations
Creek	Oakey Creek upstream of drainage channel 3 outfall	*SW032, SW040*
	Oakey Creek downstream of drainage channel outfalls	*SW010, SW011, SW012, SW013, SW056*
	Oakey Creek downstream of confluence with Westbrook Creek	*SW004, SW059*
	Doctor Creek	*SW043*
	Westbrook Creek	*SW028*
Drainage Channel	Drainage Channel 1 (On-Site)	SW065, SW066
	Drainage Channel 1 (Off-Site)	*SW026*
	Drainage Channel 2 (On-Site)	SW024, SW025
	Drainage Channel 2 (Off-Site)	SW009, SW027
	Drainage Channel 3 (On-Site)	SW019, SW021, SW063
	Drainage Channel 3 (Off-Site)	*SW057*

***Note**: Italics indicate off-site surface water location.*

Table 3 Sediment Sampling Locations

Area	Description	Sediment Sampling Locations
Creek	Oakey Creek upstream of drainage channel 3 outfall	*SD032, SD040*
	Oakey Creek downstream of drainage channel outfalls	*SD037, SD036, SD0105, SD102, SD018*
	Oakey Creek downstream of confluence with Westbrook Creek	*SD038, SD045*
	Doctor Creek	*SD007*
	Westbrook Creek	*SD070*
Drainage Channel	Drainage Channel 1 (On-Site)	SD106, SD022
	Drainage Channel 1 (Off-Site)	*SD015*
	Drainage Channel 2 (On-Site)	SD024, SD010
	Drainage Channel 2 (Off-Site)	*SD013, SD011*
	Drainage Channel 3 (On-Site)	SD016, SD025, SD107
	Drainage Channel 3 (Off-Site)	SD017

***Note**: Italics indicate off-site sediment location.*

3.0 Methodology

The methodology used for the annual comprehensive March/April 2021 sampling event was in accordance with the SAQP (AECOM, 2021) and is summarised below.

3.1 Groundwater Sampling Methodology

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).
Quality parameter field measurements	Temperature, electrical conductivity, dissolved oxygen, oxidation-reduction potential, pH and observations of water quality were recorded for all groundwater samples. Equipment calibration certificates 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. Once sampling was completed, new HydraSleeves™ were deployed at the screened interval depth in preparation for the next sampling round. There was insufficient groundwater in three monitoring wells (MW167, MW236 and MW252) for Hydrasleeve sampling. Groundwater samples were collected by bailer. Bore water samples were collected by placing the laboratory sample bottle beneath the tap and the tap slowly opened to collect the “first flush” of water.
QA/QC samples	Field quality assurance / quality control (QA/QC) samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits) and rinsate samples. Refer to **Appendix C** for assessment of QA/QC sample data. Rinsate samples were collected at the rate of one sample per fieldwork day by pouring laboratory supplied PFAS-free deionised water over the decontaminated sampling equipment. The only reusable equipment that was decontaminated during the sampling event was the IP.
Sample analysis	All primary samples were submitted for analysis for the PFAS suite using the standard levels of detection. ALS Environmental (ALS) Brisbane, Queensland was used as the primary laboratory. The National Measurement Institute (NMI) of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses were certified by the National Association of Testing Authorities (NATA). Chain of custody (COC) forms and laboratory certificates are presented in **Appendix D** and **Appendix E** respectively.

3.2 Surface Water Sampling Methodology

Table 5 Surface Water Sampling Methodology

Item	Details
Quality parameter field measurements	Temperature, electrical conductivity, dissolved oxygen, oxidation-reduction potential, pH and observations of water quality were recorded for all surface water samples. Equipment calibration certificates are provided in **Appendix F**.
Sampling methodology	Samples were 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 was lowered into the water with the cap immediately applied once the container was full.
QA/QC samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits). Equipment rinsate blanks were not collected as no reusable equipment was used during surface water sampling. Refer to **Appendix C** for assessment of QA/QC sample data.
Sample analysis	All primary samples were submitted for PFAS suite using the standard levels of detection. ALS Brisbane, Queensland was used as the primary laboratory. NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses were certified by the NATA. COC forms and laboratory certificates are presented in **Appendix D** and **Appendix E** respectively.

3.3 Sediment Sampling Methodology

Table 6 Sediment Sampling Methodology

Item	Details
Sampling methodology	Samples representative of potentially deposited sediments were collected from within the water body if possible. Sediment samples were collected using a trenching shovel from the base of the drain (where possible). At each location, a new laboratory supplied container was used for each sample.
Logging	Sediment characteristics were recorded for each sample.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits). Equipment rinsate blanks were not collected as no reusable equipment was used during sediment sampling. Refer to **Appendix C** for assessment of QA/QC sample data.
Sample analysis	All primary samples were submitted for PFAS suite using the standard levels of detection. ALS Brisbane, Queensland was used as the primary laboratory. The NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses were certified by the NATA. COC forms and laboratory certificates are presented in **Appendix D** and **Appendix E** respectively.

3.4 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 includes 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

The adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 7** below.

Table 7 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water - groundwater	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values are from NHMRC (2019). *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	The values are from the PFAS NEMP (HEPA, 2020). The 99% level of protection has been applied for slightly to moderately disturbed ecosystems. This approach is generally adopted for chemicals that bioaccumulate and biomagnify in wildlife. For the purposes of preliminary screening of analytical water results, the laboratory LOR will be adopted rather than sole use of the criteria value. *All surface water and groundwater results will be compared to these criteria.*
	PFOA	19 µg/L	

There are no human health or ecological guideline values available for sediment.

3.5 Data Quality Objectives and Data Validation

The data quality objectives and data quality indicators adopted for these works are presented in the SAQP (AECOM, 2021).

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

Data validation procedure 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 this event has been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (DCMM) (Defence, 2018) requirements.

3.6 Deviations from the SAQP

Table 8 lists the deviations from the SAQP (AECOM, 2021) during this sampling event.

Table 8 Deviations from the SAQP during sampling event for April 2021

SAQP	March / April 2021 Sampling Event
Collection of groundwater samples at 100 locations	• The groundwater sample from residential bore MW160 was not collected as the stakeholder could not be contacted. • The groundwater sample from residential bore MW020 was not collected as the stakeholder declined sampling. A replacement location was identified (MW043), however, the stakeholder did not respond to the sampling request. • The groundwater sample from residential bore MW031 was not collected as the stakeholder did not respond to the access request. • Monitoring well MW001 (Brymaroo) was dry and unable to be sampled. • Monitoring wells MW005 (Brymaroo) and MW012 (Brymaroo) were lost and unable to be sampled.
Collection of co-located surface water and sediment samples at 22 locations	• SW057 was not collected as the location was dry at the time of sampling. • Sampling of the nine on-base drainage channel locations was conducted on 23 March 2021 following a rain event to ensure these samples were collected. A functional water quality meter was not available and surface water field parameters were not able to be collected.
Collection of groundwater samples from monitoring wells using no-purge HydraSleeves™	• Groundwater samples from monitoring wells MW167, MW236 and MW252 were collected via a grab sample using bailers due to insufficient water column for Hydrasleeve sampling.

4.0 Field Observations and Results

The annual comprehensive March/April 2021 sampling event was completed on 23 March 2021 and between 12 and 28 April 2021. The results are summarised in following sections.

4.1 Groundwater

4.1.1 Groundwater Observations and Quality Parameter Field Measurements

Table 9 Groundwater Observations and Quality Parameter Field Measurements

Compound	Criteria
Access	All monitoring wells and bores were accessible except for the following: • The groundwater sample from residential bore MW160 was not collected as the stakeholder could not be contacted. • The groundwater sample from residential bore MW020 were not collected as the stakeholder declined sampling. • The groundwater sample from residential bore MW031 was not collected as the stakeholder did not respond to the access request. • Monitoring well MW001 (Brymaroo) was dry and unable to be sampled. • Monitoring wells MW005 (Brymaroo) and MW012 (Brymaroo) were lost and unable to be sampled.
Monitoring Well Network	Covers to the following monitoring wells were noted to be damaged during the fieldworks: • The stick-up monument of monitoring well MW242 (on agricultural land leased by Defence) is broken and requires replacement. The well was able to be sampled. • The gatic of monitoring well MW003 (Brymaroo) is broken and requires replacement. The well was able to be sampled.
Field Observations	A hydrocarbon odour and oil globules / sheen were noted during gauging of MW193 which is located east of Hangar C2 and close to Tank C59. The hydrocarbon contamination is associated with a known historical leak of petroleum hydrocarbons from Tank C60 in 2009 (AECOM, 2018) and is consistent with historical observations at this location. A weak organic odour was noted in MW264, MW275, MW276, MW283 and MW292. No visible or olfactory indications of contamination were observed during the sampling of the other monitoring wells. Field observations are presented **Table T1** in **Appendix B**.
Depth to LNAPL	Depth to LNAPL in MW193 was 15.707 metres below top of casing (mbtoc) with an approximate thickness of 2.075 m. Groundwater gauging data are presented in **Table T1** in **Appendix B**.

Compound	Criteria
Depth to Groundwater	Depth to groundwater in the Oakey Creek Alluvium aquifer at AACO ranged between 3.936 and 17.782 mbtoc. Groundwater elevations in the Oakey Creek Alluvium aquifer ranged between 392.755 and 408.398 mAHD. Depth to groundwater in the seven monitoring wells screened in the Walloon Coal Measures (MW269, MW273, MW289, MW291, MW293, MW295 and MW297) at AACO ranged between 9.643 and 61.919 mbtoc. Groundwater elevations in the Walloon Coal Measures were between 340.153 and 393.194 mAHD. Depth to groundwater in the Main Range Volcanics aquifer at Brymaroo ranged between 13.094 and 16.092 mbtoc. Groundwater elevations ranged between 400.435 and 405.125 mAHD. Groundwater gauging data are presented in **Table T1** in **Appendix B**.
Groundwater Flow Direction	Inferred groundwater contours and groundwater flow directions in the Oakey Creek Alluvium aquifer at the Site in April 2021 are shown on **Figure 7** in **Appendix A**. The inferred local groundwater flow direction is from east to west. Inferred groundwater contours and groundwater flow directions in the Mains Range Volcanics at Brymaroo in April 2021 are shown on **Figure 8** in **Appendix A**. The inferred local groundwater flow direction is towards the north.
Quality Parameter Field Measurements	Groundwater quality parameters were measured prior to collecting groundwater samples. The readings are presented in **Table T1** in **Appendix B** and are summarised below: AACO Management Area • Electrical conductivity ranged from 396.0 µS/cm (MW273) to 13,808 µS/cm (MW299) indicating fresh to brackish conditions. • pH ranged from 5.71 (MW290) to 12.65 (MW293). pH results indicated near neutral to alkaline conditions. • Corrected redox ranged from 39.3 mV (MW271) to 510.5 mV (MW270) indicating mildly to strongly reducing conditions. • Temperature ranged from 20.1°C (MW201) to 28.5°C (MW270). • The dissolved oxygen results ranged between 0.00 (MW283) and 4.66 mg/L (MW249 indicating poorly to moderately oxygenated conditions). Brymaroo Satellite Site • Electrical conductivity ranged from 1,084 µS/cm (MW004) to 2,467 µS/cm (MW009) indicating fresh to brackish conditions. • pH ranged from 7.37 (MW003) to 8.62 (MW006). pH results generally indicated near neutral to slightly alkaline conditions. • Redox ranged from 117.7 mV (MW002) to 296.8 mV (MW008) indicating mildly to moderately reducing conditions. • Temperature ranged from 20.4°C (MW002) to 26.9°C (MW006). • Dissolved oxygen results ranged between 0.04 (MW010) and 1.74 mg/L (MW006) indicating poorly to mildly oxygenated conditions.
Weather Conditions	Weather conditions during groundwater sampling were generally hot and dry.
Estate Management Works or Training Activities	During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations.

4.1.2 Groundwater Analytical Results

The PFAS groundwater analytical results from this sampling event are presented in **Table T2** in **Appendix B**. There was one first-time detection of sum of PFHxS and PFOS in MW291. There were no first-time exceedances of the human health guideline values in the March/April 2021 sampling event for sum of PFHxS and PFOS and PFOA compared to the historical dataset. Deviations from the historical dataset are recorded in **Table 10** below and presented on **Figure 9** in **Appendix A**.

Sixty-one of the 94 groundwater samples exceeded the human health drinking water guideline value for sum of PFHxS and PFOS with 20 samples exceeding the PFOA guideline value. All 66 groundwater samples that exceeded the limit of reporting exceeded the ecological guideline for PFOS for 99% protection of freshwater ecosystems. None of the groundwater samples exceeded the PFOA ecological guideline value.

Table 10 Deviation from Historical Groundwater Dataset

Deviation Type	Monitoring wells/bores	Sum of PFHxS+PFOS concentration (µg/L)		PFOA concentration (µg/L)	
		April 2021	Historical maximum	April 2021	Historical maximum
First time detections of Sum of PFHxS+PFOS or PFOA in groundwater	MW291	0.03	<0.01	<0.01	<0.01
First time exceedance of the NEMP (HEPA, 2020) drinking water guidelines groundwater in monitoring wells / bores	There were no first-time exceedances of the NEMP (HEPA, 2020) drinking water guidelines.				

Note: Blue shading indicates a sampling detection with a first-time detection of PFOS + PFHxS or PFOA.

4.2 Surface water

4.2.1 Surface Water Observations and Quality Parameter Field Measurements

Table 11 Surface Water Observations and Quality Parameter Field Measurements

Compound	Criteria
Access	Twenty-one of the 22 surface water sampling locations were accessible during the March/April 2021 sampling. The SW057 location was dry at the time of sampling.
Field Observations	Field observations were recorded for 12 of the 21 samples collected. Field observations for nine of the locations were not recorded as a functional water quality meter was not available at the time of sampling (refer **Section 3.6** above). A biosheen appearance was noted at SW011. No visual or olfactory indications of contamination were observed during the sampling of the other surface water sampling locations. Field observations are presented in **Table T3** in **Appendix B**.

Compound	Criteria
Quality Parameter Field Measurements	Surface water quality parameters were measured prior to collecting surface water samples. The readings are presented in **Table T3** in **Appendix B** and are summarised below: • Dissolved oxygen ranged from 1.62 mg/L (SW011) to 8.87 mg/L (SW028) indicating a range between poorly and moderately oxygenated conditions. • Electrical conductivity ranged from 169.0 µS/cm (SW013) to 1,302 µS/cm (SW059) indicating fresh conditions. • pH ranged from 6.8 (SW011) to 9.18 (SW028). pH results generally indicated near neutral conditions. • Corrected redox potential ranged from 233.3 mV (SW032) to 347.9 mV (SW009) indicating moderately reducing conditions. • Temperature ranged from 20.9°C (SW011) and 28.9°C (SW012).
Weather Conditions	Weather conditions during groundwater sampling were generally hot and dry.
Estate Management Works or Training Activities	During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations.

4.2.2 Surface Water Analytical Results

The PFAS surface water analytical results from this sampling event are presented in **Table T4** in **Appendix B**.

No deviations from the historical dataset were noted in the data collected in March/April 2021 as per **Table 12** below.

Table 12 Deviation from Historical Surface Water Dataset

Deviation Type	Surface Water Sampling Locations	Sum of PFHxS+PFOS concentration (µg/L)		PFOA concentration (µg/L)	
		April 2021	Historical maximum	April 2021	Historical maximum
First time detections of Sum of PFHxS+PFOS or PFOA in surface water	There were no first-time detections above the limit of reporting in the dataset.				
First time exceedance of the NHMRC (2019) recreational use guidelines	There were no first-time exceedances of the NHMRC (2019) recreational use guidelines.				

4.3 Sediment

4.3.1 Sediment Observations and Field Measurements

Table 13 Sediment Observations and Field Measurements

Compound	Criteria
Access	All sediment sampling locations were accessible.
Field Observations	No visible or olfactory indications of contamination were observed during the sampling of the sediment locations. Field observations are presented in **Table T5** in **Appendix B**.
Weather Conditions	Weather conditions during groundwater sampling were generally hot and dry.
Estate Management Works or Training Activities	During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations.

4.3.2 Sediment Analytical Results

The PFAS sediment analytical results from this sampling event are presented in **Table T6** in **Appendix B**. No deviations from the historical dataset are noted in the data collected in March/April 2021 as per **Table 14** below.

Table 14 Deviation from Historical Sediment Dataset

Deviation Type	Sediment Locations	Sum of PFHxS+PFOS concentration (mg/kg)		PFOA concentration (mg/kg)	
		April 2021	Historical maximum	April 2021	Historical maximum
First time detections of Sum of PFHxS+PFOS or PFOA in sediment	There were no first-time detections above the limit of reporting in the dataset.				

Note: Blue shading indicates a sampling detection with a first-time detection of PFOS + PFHxS or PFOA.

5.0 Summary and Next Sampling Event

5.1 Summary of Monitoring Event

A comprehensive groundwater, surface water and sediment monitoring event was completed within and outside of the AACO Management Area, including at Brymaroo, between 23 March and 28 April 2021. The program included sampling of groundwater from 80 monitoring wells, 20 off-Site residential bores, and 22 co-located surface water and sediment sampling locations.

Table 15 summarises the findings of the annual comprehensive March/April 2021 sampling event and the recommended actions.

Table 15 Summary of Sampling Event

Item	Comment	Recommended Actions
Access to sampling locations	94 out of the 100 monitoring well/bore locations were accessible and able to be sampled. Access to MW020 was declined and MW031 and MW160 were unable to be accessed as the stakeholders did not respond; MW001 (Brymaroo) was dry; MW005 and MW012 (both at Brymaroo) were lost. 21 out of the 22 surface water locations were accessible and able to be sampled. SW057 was dry and unable to be sampled. All of the sediment sampling locations were accessible and able to be sampled. The loss of the groundwater sampling locations have the potential to impact on the understanding of the distribution of PFAS in groundwater. The non-sampling of the SW057 is not considered critical to understanding the distribution of PFAS in sediment and surface water.	A review of the Brymaroo monitoring network will be undertaken in the interpretative report to assess potential data gaps and the potential need for additional wells in time for the October 2021 sampling event.
Monitoring well network condition	No issues were identified in 75 out of the 77 monitoring wells sampled. Damage two monitoring wells was identified: - The stick-up monument for MW242 on Defence-leased land has been destroyed. - The gatic of MW003 at Brymaroo is broken.	Defence to contact leaseholder to request repair of MW242 cover. The gatic for MW003 at Brymaroo requires repair.
Analytical Results	PFAS concentrations were consistent with historical results for the 94 groundwater samples analysed. PFAS concentrations in the 21 surface water and 22 sediment sample were consistent with historical results.	Ongoing monitoring in accordance with the OMP.
First-time detections of Sum of PFHxS+PFOS or PFOA	One of the 94 groundwater samples recorded a first-time detection of sum PFHxS+PFOS (MW291 (0.03 µg/L), slightly above the laboratory reporting limit (0.01 µg/L) No first-time detections of PFAS above the laboratory limit of reporting were recorded in any of	Ongoing monitoring in accordance with the OMP

Item	Comment	Recommended Actions
	the 21 surface water samples or 22 sediment samples collected.	
First time exceedance of NEMP drinking water guideline values or NHMRC (2019) recreational use guidelines	There were no first-time exceedances of the NEMP (HEPA, 2020) drinking water guidelines or NHMRC (2019) recreational use guidelines.	NIL

5.2 Upcoming Sampling Events

A targeted sampling event is scheduled for October 2021.

5.3 Upcoming Annual Interpretive Report

The next annual interpretative report is scheduled for September 2021.

6.0 References

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Appendix A

Figures

Appendix A Figures

Figure 1 Location of AACO and Brymaroo Satellite Site

Figure 2 Management Zones – Activities with Elevated PFAS Exposure

Figure 3 On-Site Groundwater Monitoring Locations

Figure 4 Off-Site Groundwater Monitoring Locations

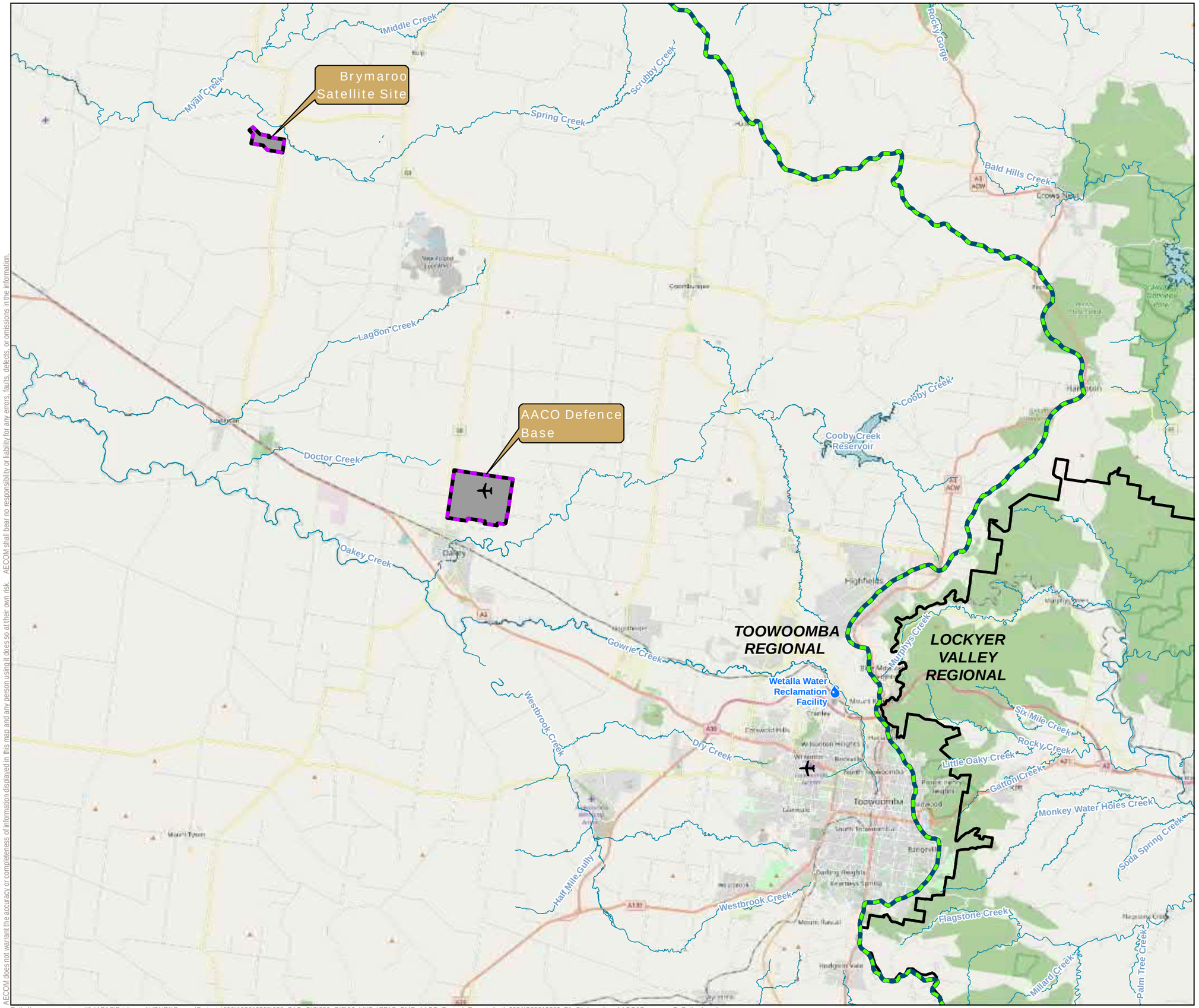
Figure 5 Brymaroo Groundwater Monitoring Locations

Figure 6 Surface Water and Sediment Sampling Locations

Figure 7 Inferred Groundwater Contours – On-Site and Off-Site

Figure 8 Inferred Groundwater Contours – Brymaroo

Figure 9 Groundwater Results: Deviations from Historical Data – Brymaroo



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DATUM GDA 1994. PROJECTION MGA ZONE 56

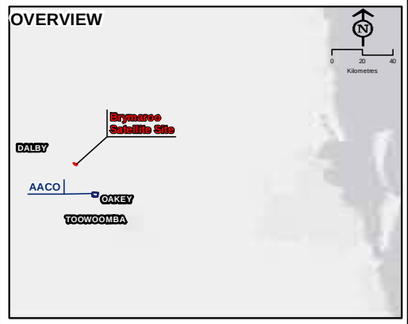
0 2.5 5
Kilometres

1:200,000 (when printed at A3)

LEGEND

- Airport
- Watercourse/waterbody
- Great Dividing Range
- Investigation Area
- Local Governmental Area
- AACO & Brymaroo Base Boundaries
- National Park

OVERVIEW



Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011

PFAS OMP AACO SAMPLING EVENT
FACTUAL REPORT: APRIL 2021

SITE LOCATION

PROJECT ID	60612563
CREATED BY	WW
LAST MODIFIED	james.peachey; 19/07/2021
VERSION:	1

FIGURE 1

A3 size

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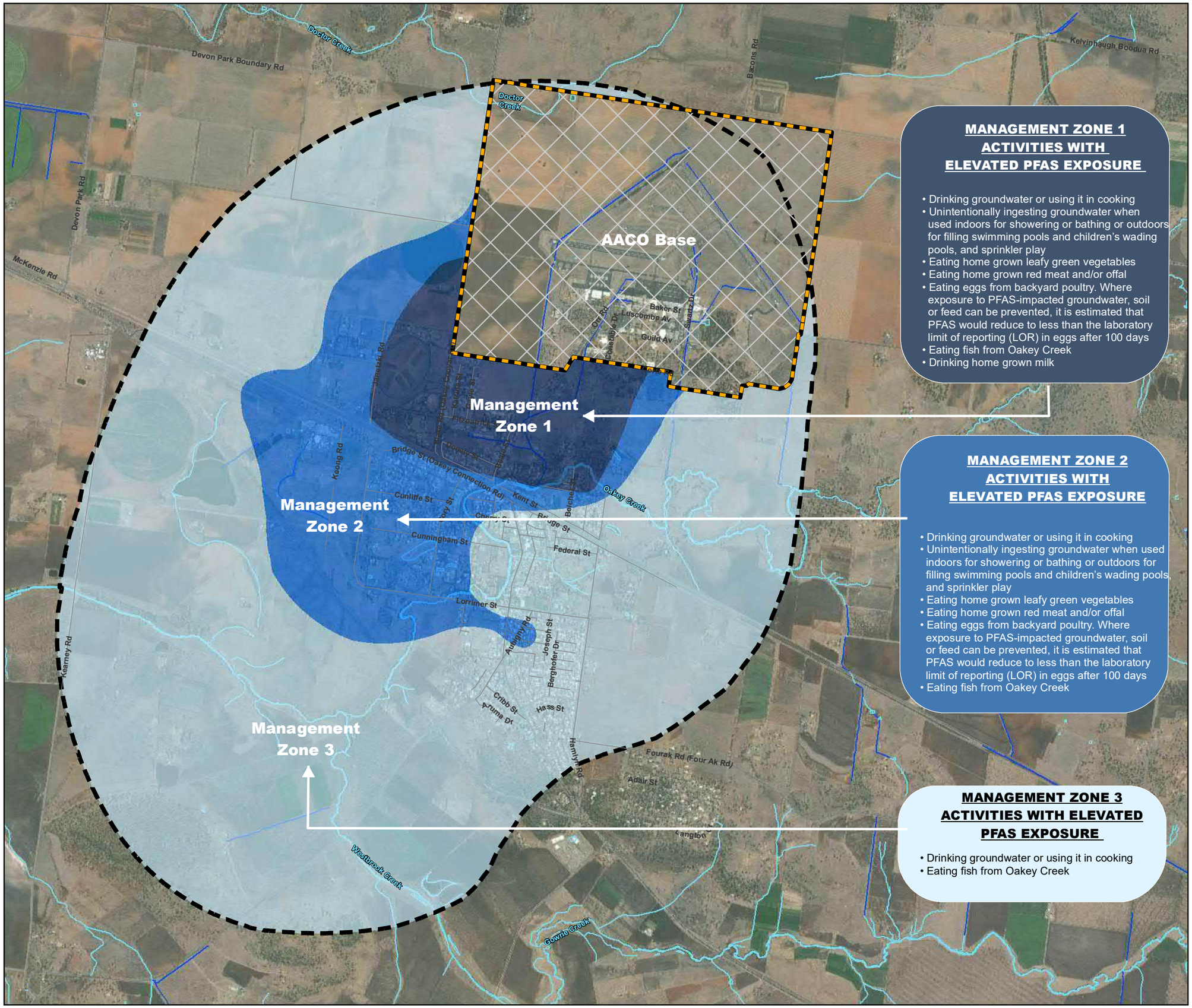

MANAGEMENT ZONE 1 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from backyard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek
- Drinking home grown milk

MANAGEMENT ZONE 2 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from backyard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek

MANAGEMENT ZONE 3 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Eating fish from Oakey Creek

LEGEND

- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Area
- AACO Base

km
0 0.25 0.5 1

SCALE 1:35,000
SIZE A3
SHEET 1 of 1
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 2: Management Zones - Activities with Elevated PFAS Exposure

PROJECT
PFAS OMP AACO SAMPLING EVENT
FACTUAL REPORT: MARCH / APRIL 2021

CLIENT
DEPARTMENT OF DEFENCE

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LEGEND

- On-Site Groundwater Monitoring Locations
- Drainage channel
- Watercourse/water body
- Site Boundary

N

0 75 150 300 m

AECOM

SCALE 1:9,100

SIZE A3

SHEET 1 of 1

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 3: On-Site Groundwater Monitoring Locations

PROJECT

PFAS OMP AACO SAMPLING EVENT
FACTUAL REPORT: APRIL 2021

CLIENT

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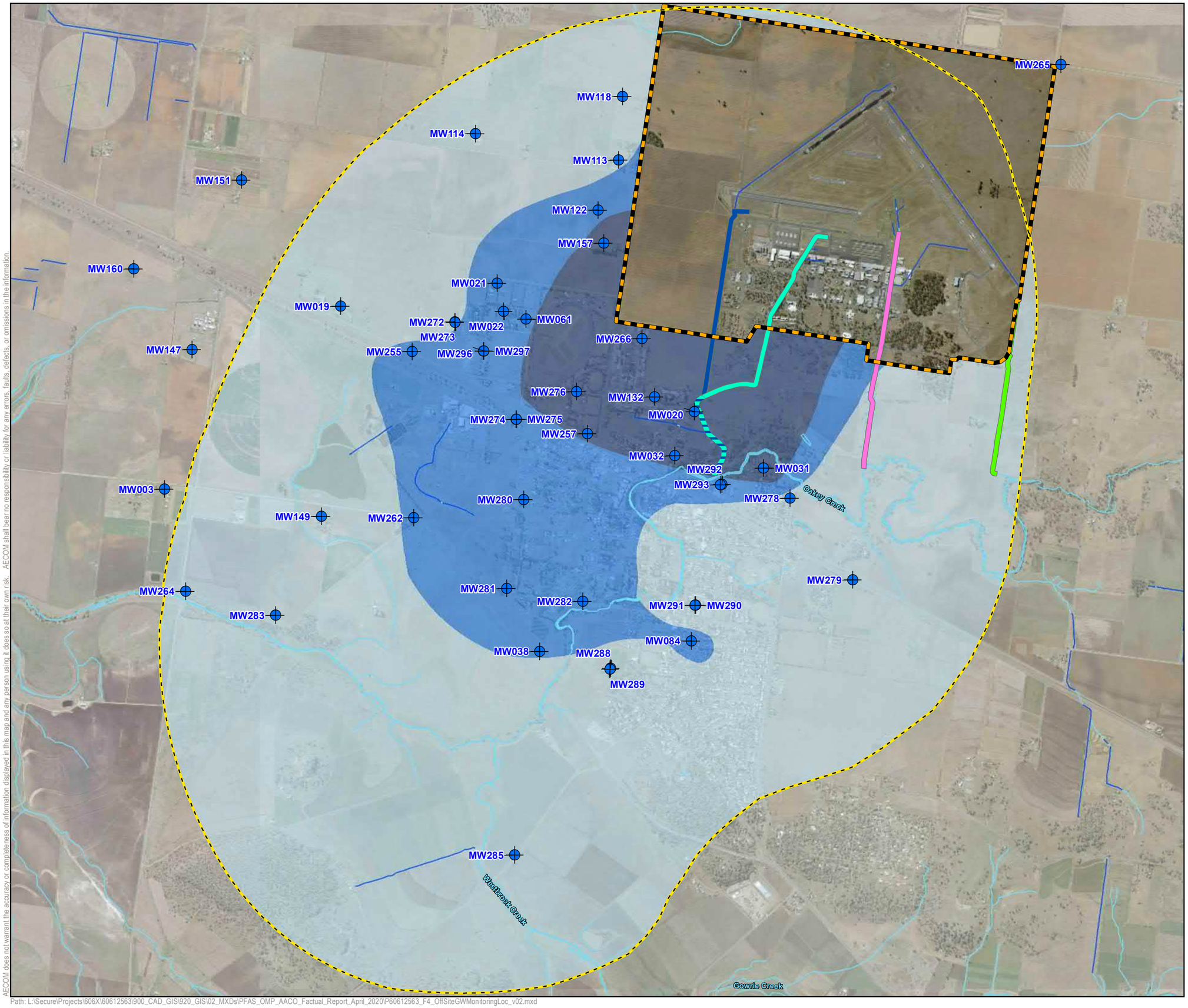

LEGEND

- Off-Site Groundwater Monitoring Locations
- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

0 0.25 0.5 1 km

AECOM

SCALE 1:30,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 4: Off-Site Groundwater Monitoring Locations

PROJECT

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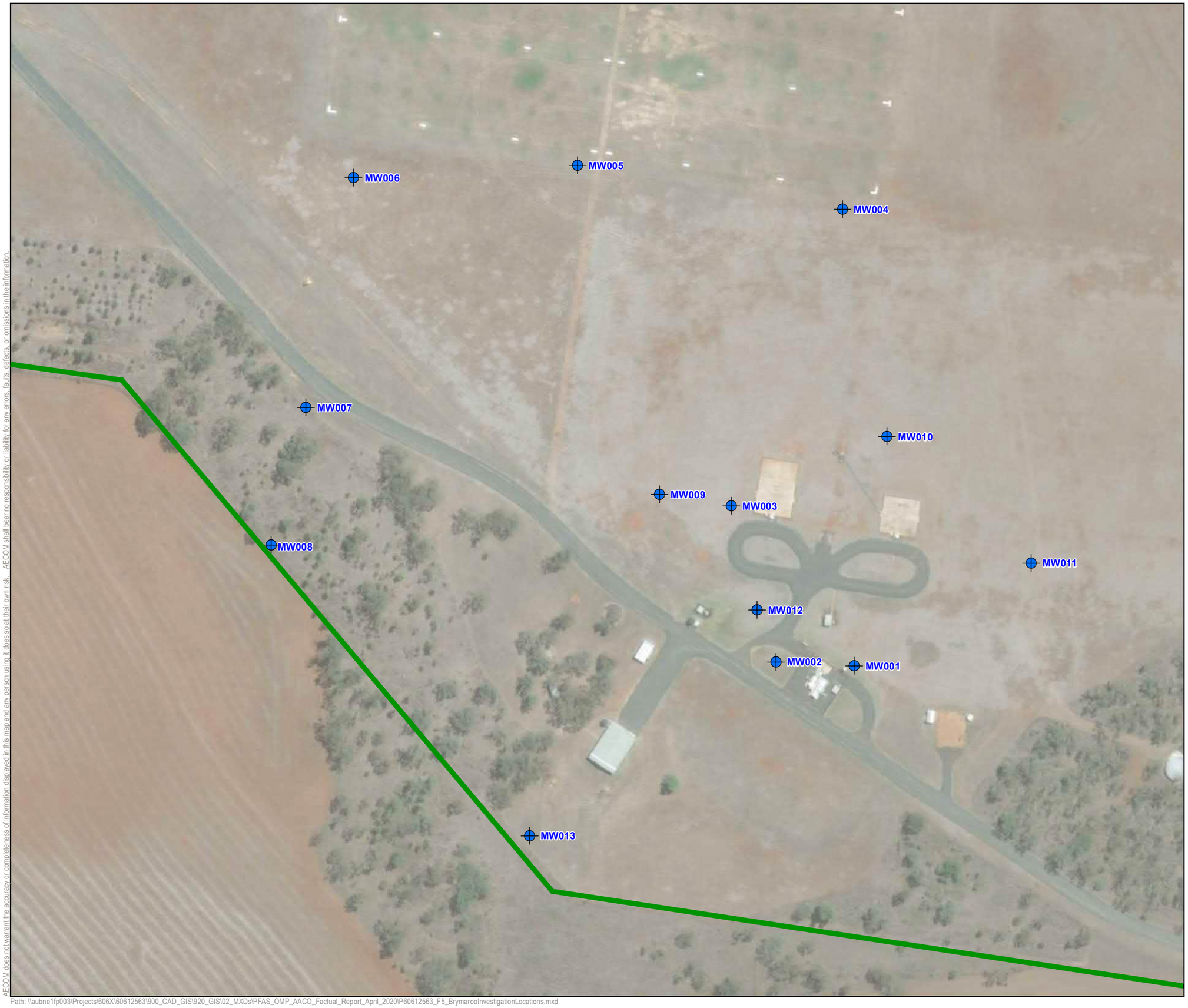

LEGEND

- Groundwater Monitoring Locations
- Brymaroo Satellite Site Boundary

N

0 10 20 40 m

AECOM

SCALE 1:2,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 5: Brymaroo Groundwater Monitoring Locations

PROJECT

PFAS OMP AACO SAMPLING EVENT FACTUAL REPORT: MARCH / APRIL 2021

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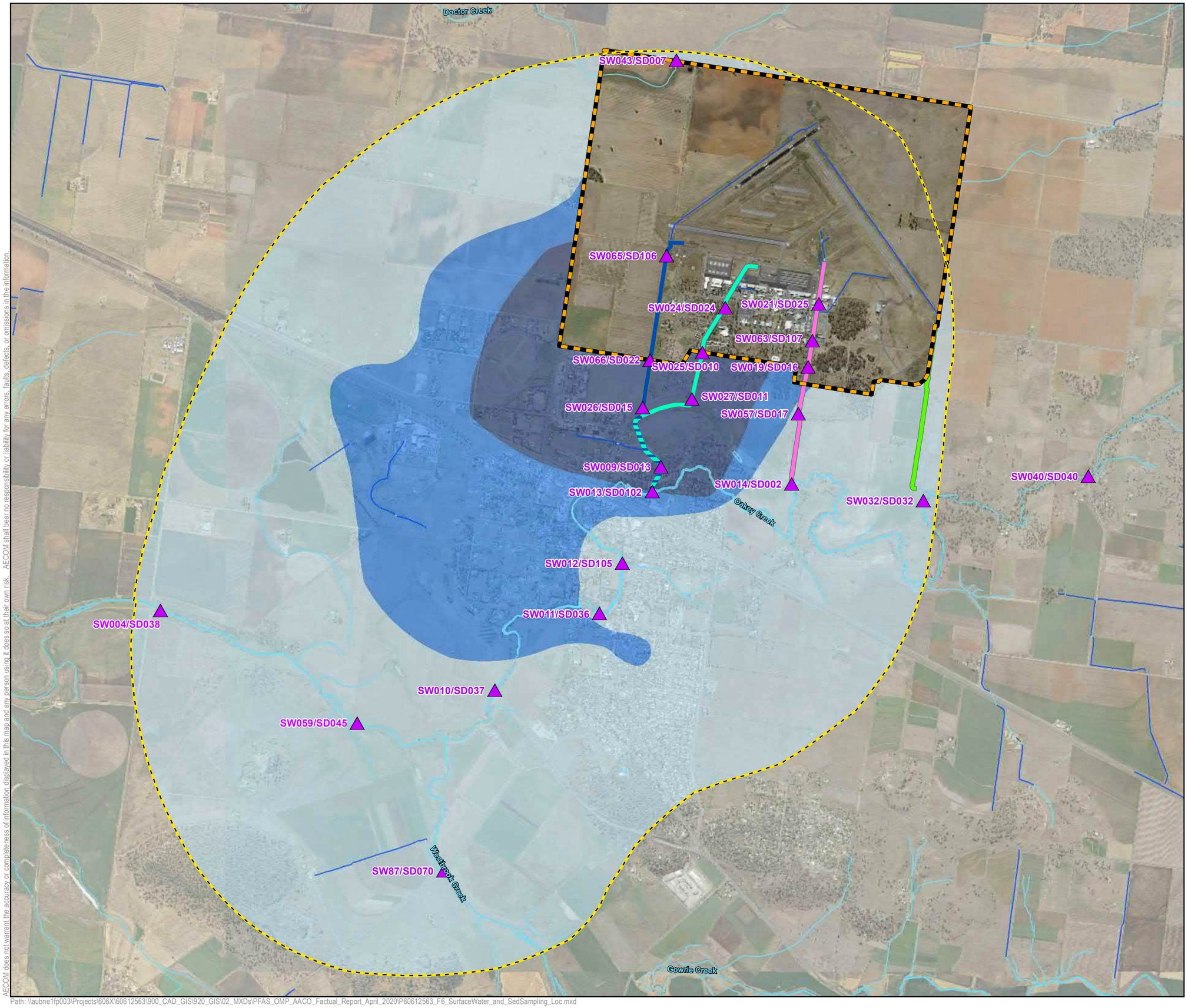

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LEGEND

- Surface Water and Sediment Sampling Locations
- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

N

0 0.25 0.5 1 km

AECOM

SCALE 1:32,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 6: Surface Water and Sediment Sampling Locations

PROJECT

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FACTUAL REPORT: MARCH / APRIL 2021

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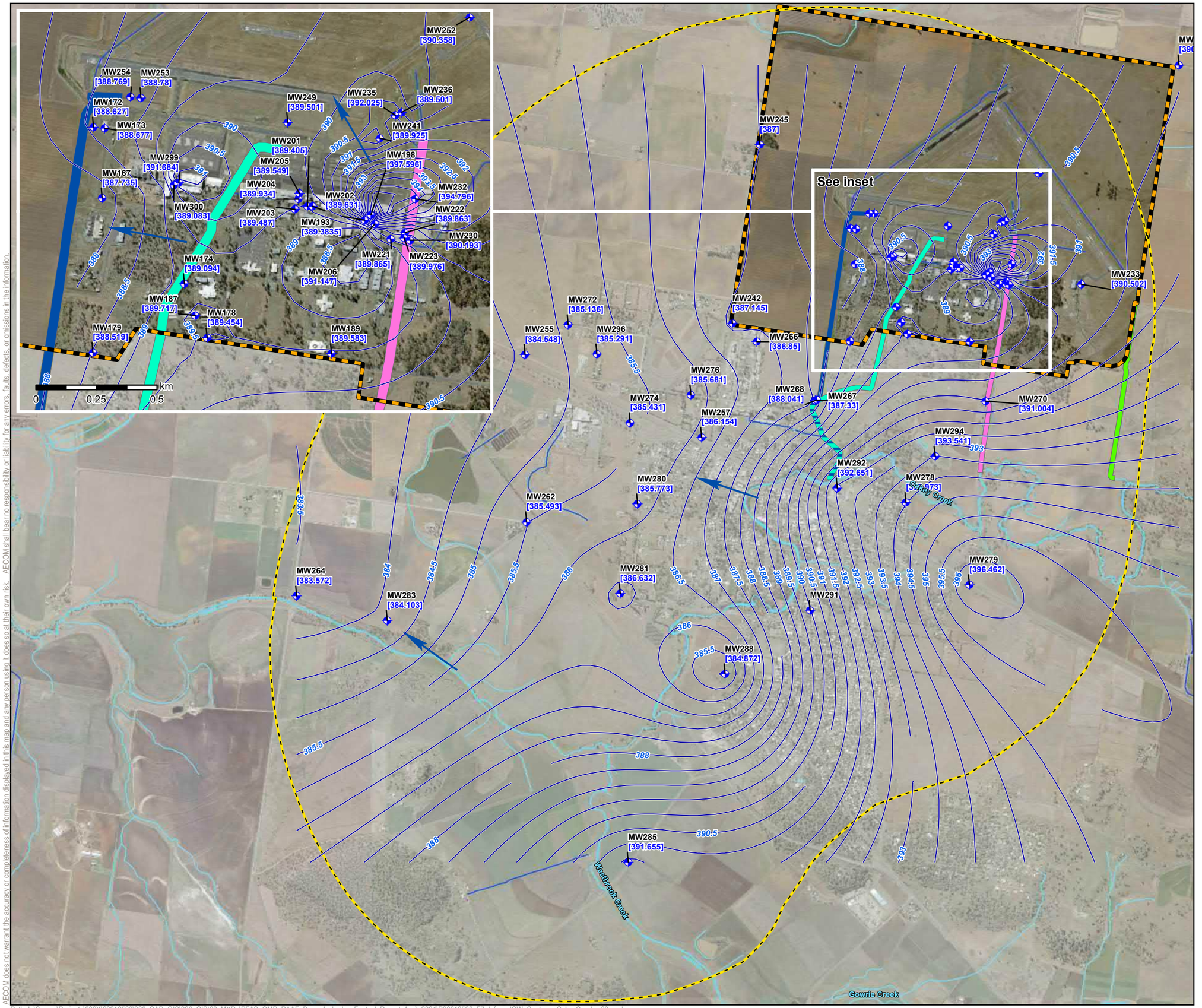

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LEGEND

- Monitoring Wells (2021)
- Groundwater Contours (2021)
- Groundwater Flow (2021)
- Drainage channel
- Watercourse/water body
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

N

0 0.25 0.5 km

AECOM

SCALE 1:30,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 7: Inferred Groundwater Contours in the Oakey Creek Alluvium: April 2021

PROJECT

PFAS OMP AACO SAMPLING EVENT
FACTUAL REPORT: MARCH / APRIL 2021

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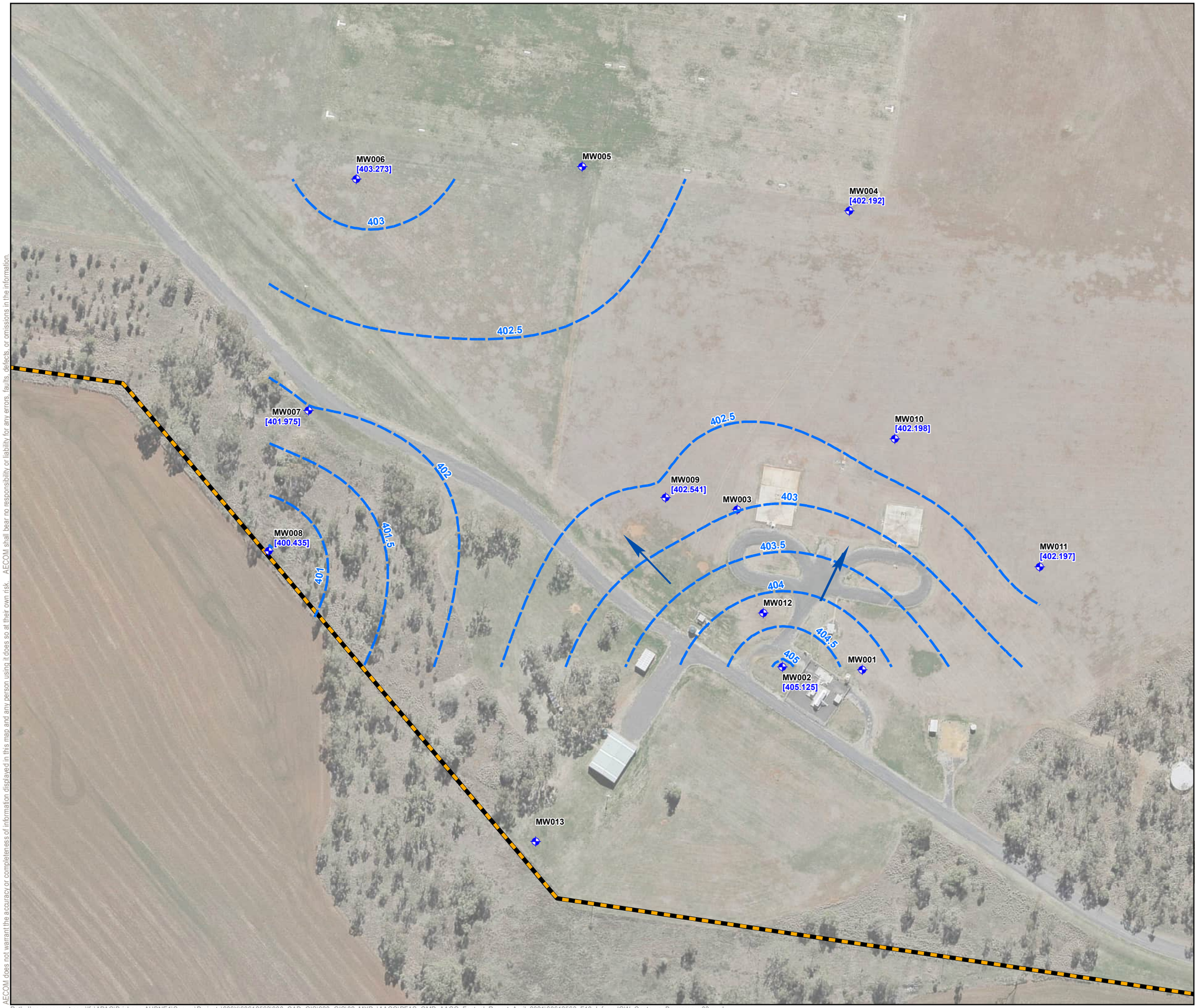

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LEGEND

- Monitoring Wells (Groundwater Elevation in mAHD))
- Groundwater Contours (mAHD)
- Inferred Groundwater Flow
- Brymaroo Satellite Site Boundary

N

0 10 20 40 m

AECOM

SCALE 1:2,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 8: Inferred Groundwater Contours in the Main Range Volcanics at Brymaroo: April 2021

PROJECT

PFAS OMP AACO SAMPLING EVENT
FACTUAL REPORT: MARCH / APRIL 2021

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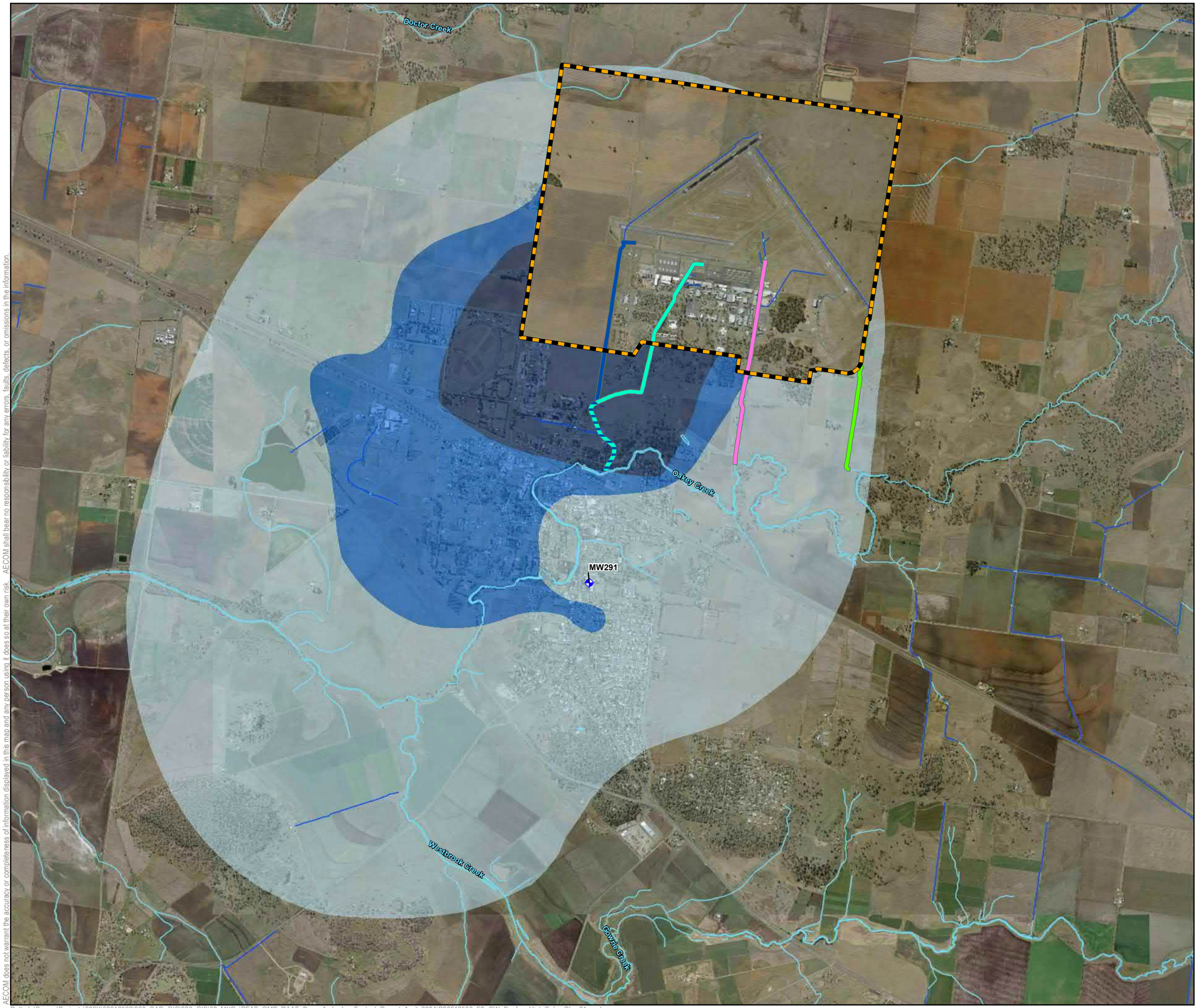

LEGEND

- First-time Detection of PFHxS+PFOS
- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Site Boundary

N

0 0.5 1 km

AECOM

SCALE 1:35,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 9: Groundwater Results: Deviations from Historical Data - AACO

PROJECT

PFAS OMP AACO SAMPLING EVENT
FACTUAL REPORT: MARCH / APRIL 2021

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Appendix B

Tables

Appendix B Tables

Table T1 Groundwater Gauging and Quality Parameter Field Measurement Results

Table T2 Groundwater PFAS Analytical Results

Table T3 Surface Water Quality Parameter Field Measurement Results

Table T4 Surface Water PFAS Analytical Results

Table T5 Sediment Observations Results

Table T6 Sediment PFAS Analytical Results

Table T1 Groundwater Gauging and Quality Parameter Field Measurement Results

Property ID	Well ID	Date Hydrasleeve Installed	Date Hydrasleeve Sampled	Gauging Date	Well Depth (mbtoc)	Depth to LNAPL (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Corrected Groundwater Elevation (mAHD)*	Condition of Gatic	DO (mg/L) *Field measurement*	EC (µS/cm) *Field measurement*	pH *Field measurement*	E_r (mV) *Field measurement*	E_h (mV)	Temp (°C) *Field measurement*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
1435	MW001	-	-	-	12.17	-	-	418.534	-	-	Good	-	-	-	-	-	-	-	-	-	-	Dry
1435	MW002	1/04/2020	16/04/2021	16/04/2021	20.54	-	13.094	418.219	405.125	405.125	Good	0.16	2245	7.78	-87.3	117.7	20.4	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW003	1/04/2020	16/04/2021	16/04/2021	-	-	-	418.054	-	-	Damaged	0.1	2248	7.37	40.4	245.4	24.8	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW004	1/04/2020	16/04/2021	16/04/2021	22.49	-	15.186	417.378	402.192	402.192	Good	0.84	1084	8.55	-39.1	165.9	23.9	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N/A - well lost
1435	MW006	1/04/2020	16/04/2021	16/04/2021	27.06	-	13.186	416.459	403.273	403.273	Good	1.74	1392	8.62	0.4	205.4	26.9	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW007	1/04/2020	16/04/2021	16/04/2021	24.95	-	14.438	416.413	401.975	401.975	Good	1.25	1267	7.9	56.1	261.1	24.9	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW008	1/04/2020	16/04/2021	16/04/2021	22.08	-	14.757	415.192	400.435	400.435	Good	0.26	1617	7.94	91.8	296.8	25.5	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW009	1/04/2020	16/04/2021	16/04/2021	25.9	-	15.448	417.989	402.541	402.541	Good	0.83	2467	7.48	85.2	290.2	25.3	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW010	1/04/2020	16/04/2021	16/04/2021	26.85	-	15.826	418.024	402.198	402.198	Good	0.04	1614	8.28	-13.4	191.6	23.1	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW011	1/04/2020	16/04/2021	16/04/2021	27.42	-	16.092	418.289	402.197	402.197	Good	0.35	1496	8.09	-16.5	188.5	21.3	Clear	Clear	No odour	No sheen	Hydrasleeve
1435	MW012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N/A - well lost
1435	MW013	1/04/2020	16/04/2021	16/04/2021	-	-	-	415.927	-	-	Good	1.33	1798	7.98	89.3	294.3	27.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW003	None-tap	None-tap	13/04/2021	-	-	-	-	-	-	-	1.51	1912	7.58	124.2	329.2	18.1	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW019	None-tap	None-tap	13/04/2021	-	-	-	-	-	-	-	3.51	2348	7.26	108.2	313.2	21.9	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW020	None-tap	None-tap	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N/A - stakeholder uncontactable
0207	MW021	None-tap	None-tap	19/04/2021	-	-	-	-	-	-	-	3.03	3764	7.77	104.1	309.1	21	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW022	None-tap	None-tap	-	-	-	-	-	-	-	-	3.42	1760	6.98	40	245	18.7	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW031	None-tap	None-tap	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N/A - stakeholder uncontactable
0207	MW032	None-tap	None-tap	19/04/2021	-	-	-	-	-	-	-	5.02	2631	8.54	144.7	349.7	24.5	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW038	None-tap	None-tap	15/04/2021	-	-	-	-	-	-	-	0.44	1285	9.22	46.7	251.7	23.7	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW056		13/04/2021	13/04/2021								0.48	2287	6.68	-	-	21.1	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW113	None-tap	None-tap	15/04/2021	-	-	-	-	-	-	-	0.39	2264	7.33	-44.7	160.3	26.6	Low	Clear	No odour	No sheen	Tap Sample
0207	MW114	None-tap	None-tap	-	-	-	-	-	-	-	-	3.74	1716	6.76	-7.7	197.3	22.9	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW118	None-tap	None-tap	-	-	-	-	-	-	-	-	4.16	1743	6.96	-10.5	194.5	30	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW122	None-tap	None-tap	-	-	-	-	-	-	-	-	5.97	1796	6.77	-52.1	152.9	22.2	Turbid	Brown	No odour	No sheen	Tap Sample
0207	MW132	None-tap	None-tap	19/04/2021	-	-	-	-	-	-	-	5.29	2115	8.31	137.9	342.9	23.7	Low	Clear	No odour	No sheen	Tap Sample
0207	MW134	None-tap	None-tap	20/04/2021	-	-	-	-	-	-	-	4.51	4226	11.39	-212.8	-7.8	20.7	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW147	None-tap	None-tap	13/04/2021	-	-	-	-	-	-	-	1.62	4000	7.31	37.2	242.2	23.6	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW149	None-tap	None-tap	19/04/2021	-	-	-	-	-	-	-	2.14	4771	4.75	261.6	466.6	21.1	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW151	None-tap	None-tap	13/04/2021	-	-	-	-	-	-	-	3.49	1868	7.22	125.9	330.9	20	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW157	None-tap	None-tap	-	-	-	-	-	-	-	-	4.2	2194	6.83	22.3	227.3	22.5	Clear	Clear	No odour	No sheen	Tap Sample
0207	MW160	None-tap	None-tap	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	N/A - stakeholder uncontactable
0207	MW167	None-bailed	None-bailed	17/04/2021	15.34	-	14.693	402.428	387.735	387.735	Good	2.71	3610	7.61	97.8	302.8	22.7	Turbid	Light brown	No odour	No sheen	Grab sample collected with bailer due to insufficient water column.
0207	MW172	20/10/2020	14/04/2021	14/04/2021	17.17	-	14.191	402.818	388.627	388.627	Good	2.37	1813	7.34	93.8	298.8	21.4	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW173	20/10/2020	14/04/2021	14/04/2021	17.95	-	14.585	403.262	388.677	388.677	Good	3	2081	7.23	107.4	312.4	22	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW174	20/10/2020	14/04/2021	14/04/2021	29.99	-	14.978	404.072	389.094	389.094	Good	1.11	2871	7.3	93.7	298.7	23	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW178	19/10/2020	17/04/2021	17/04/2021	17.4	-	14.059	403.513	389.454	389.454	Good	0.04	6431	7.44	90.9	295.9	22.6	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW179	20/10/2020	16/04/2021	16/04/2021	20.98	-	14.487	403.006	388.519	388.519	Good	0.74	5039	7.91	135.2	340.2	26	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW187	20/10/2020	17/04/2021	17/04/2021	18.29	-	14.859	404.576	389.717	389.717	Good	0.31	6437	7.34	113.7	318.7	22.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW189	20/10/2020	17/04/2021	17/04/2021	21.05	-	15.069	404.652	389.583	389.583	Good	0.93	7193	7.18	142.1	347.1	21.8	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW193	20/10/2020	14/04/2021	14/04/2021	19.74	15.707	17.782	405.630	387.848	389.384	Good	0.5	6918	7.25	27.8	232.8	22.9	Clear	Clear	HC odour	Oil globules / Sheen	Hydrasleeve
0207	MW198	19/10/2020	14/04/2021	14/04/2021	13.48	2.075	7.909	405.505	397.596	401.913	Good	0.29	1381	7.18	145.8	350.8	23.9	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW201	23/10/2020	15/04/2021	15/04/2021	19.935	-	15.395	404.800	389.405	389.405	Good	1.07	3443	6.78	212.4	417.4	20.1	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW202	23/10/2020	17/04/2021	17/04/2021	19.13	-	15.369	405.000	389.631	389.631	Good	1.21	4737	7.42	115.8	320.8	23.3	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW203	22/10/2020	15/04/2021	15/04/2021	20.102	-	15.613	405.100	389.487	389.487	Good	1.7	2433	6.98	181.5	386.5	23.1	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW204	22/10/2020	17/04/2021	17/04/2021	19.99	-	15.266	405.200	389.934	389.934	Good	2.85	7258	7.17	117.3	322.3	22.5	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW205	22/10/2020	17/04/2021	17/04/2021	20.1	-	16.151	405.700	389.549	389.549	Good	1.72	3738	7.3	105.2	310.2	23.5	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW206	19/10/2020	14/04/2021	14/04/2021	19.14	-	14.573	405.720	391.147	391.147	Good	1.07	5168	7.33	146.1	351.1	24.2	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW221	19/10/2020	14/04/2021	14/04/2021	19.39	-	15.631	405.496	389.865	389.865	Good	0.68	2272	7.57	134.4	339.4	23.2	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW222	19/10/2020	14/04/2021	14/04/2021	19.11	-	15.853	405.716	389.863	389.863	Good	3.04	3110	7.31	128.9	333.9	25.1	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW223	19/10/2020	14/04/2021	14/04/2021	20.18	-	15.869	405.845	389.976	389.976	Good	4.04	2700	7.14	128.4	333.4	24.9	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW229	20/10/2020	14/04/2021	14/04/2021	15.66	-	3.936	405.533	401.597	401.597	Good	0.15	2127	7.62	95.3	300.3	26.7	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW230	19/10/2020	14/04/2021	14/04/2021	19.01	-	15.223	405.416	390.193	390.193	Good					205						Hydrasleeve
0207	MW232	20/10/2020	14/04/2021	14/04/2021	12.04	-	11.102	405.898	394.796	394.796	Good	2.45	456.2	7.35	151	356	26	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW233	21/10/2020	17/04/2021	17/04/2021	17.84	-	15.968	406.470	390.502	390.502	Good	0.78	1778	7.87	94.8	299.8	22	Turbid	Light brown	No odour	No sheen	Hydrasleeve
0207	MW235	20/10/2020	14/04/2021	14/04/2021	22.56	-	14.283	406.308	392.025	392.025	Good	0.15	2186		118.7	323.7	22.7	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW236	None-bailed	None-bailed	14/04/2021	16.74	-	16.152	405.653	389.501	389.501	Good	1.81	2440	7.05	128.3	333.3	23.5	Turbid	Brown	No odour	No sheen	Grab sample collected with bailer due to insufficient water column.
0207	MW241	20/10/2020	14/04/2021	14/04/2021	18.1	-	15.958	405.883	389.925	389.925	Good	3.79	1184	7.2	118.3	323.3	23	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW242	23/10/2020	20/04/2021	20/04/2021	20.09	-	14.885	402.030	387.145	387.145	Damaged	1.73	3942	7.04	93.8	298.8	25	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW245	20/10/2020	20/04/2021	20/04/2021	20.89	-	15.981	402.981	387.000	387.000	Good	-	-	-	-	-	-	Clear	Clear	No odour	No sheen	Hydrasleeve. No parameters
0207	MW249	20/10/2020	14/04/2021	14/04/2021	18.87	-	15.268	404.769	389.501	389.501	Good	4.66	2209	7.21	97.8	302.8	23.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW252	20/10/2020	None-bailed	14/04/2021	16.63	-	15.804	406.162	390.358	390.358	Good	2.47	1233	7.15	126.5	331.5	25.9	Turbid	Brown	No odour	No sheen	Grab sample collected with bailer due to insufficient water column.
0207	MW253	20/10/2020	14/04/2021	14/04/2021	18.16	-	14.299	403.079	388.780	388.780	Good	0.51	2915	7.06	99.7	304.7	23.9	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW254	20/10/2020	14/04/2021	14/04/2021	16.4	-	14.281	403.050	388.769	388.769	Good	2.24	2013	7.21	195.3	400.3	21.3	Turbid	Light brown	No odour	No sheen	Hydrasleeve
0207	MW255	21/10/2020	13/04/2021	13/04/2021	24.07	-	13.236	397.784	384.548	384.548	Good	3.03	2754	7.42	134.5	339.5	20.8	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW257	21/10/2020	17/04/2021	17/04/2021	23.93	-	14.679	400.833	386.154	386.154	Good	0.23	4854	7.57	-10.8	194.2	21.7	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW262	21/10/2020	19/04/2021	19/04/2021	17.84	-	12.836	398.329	385.493	385.493	Good	1.56	5347	7.91	140.6	345.6	22.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW264	22/10/2020	13/04/2021	13/04/2021	11.05	-	9.183	392.755	383.572	383.572	Good	0.41	2970	7.23	21.7	226.7	21.8	Turbid	Light grey	Slight organic odour	No sheen	Hydrasleeve
0207	MW265	23/03/2020	12/04/2021	12/04/2021	19.12	-	17.46	408.398	390.938	390.938	Good	1.27	988	7.37	89.6	294.6	23.5	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW266	23/03/2020	20/04/2021	20/04/2021	21.35	-	14.466	401.316	386.850	386.850	Good	0.65	6263	6.89	110.7	315.7	26.9	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW267	24/03/2020	15/04/2021	15/04/2021	46.97	-	14.062	401.392	387.330	387.330	Good	0.05	1733	10.66	36.8	241.8	27.6	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW268	24/03/2020	15/04/2021	15/04/2021	20.1	-	13.282	401.323	388.041	388.041	Good	0.29	4553	8.6	107.2	312.2	21.5	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW269	21/10/2020	15/04/2021	15/04/2021	88.12	-	34.424	401.958	367.534	367.534	Good	0.9	3823	12.07	-82.2	122.8	24	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW270	24/03/2020	15/04/2021	15/04/2021	19.58	-	13.074	404.078	391.004	391.004	Good	0.79	5459	6.82	305.5	510.5	28.5	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW271	24/03/2020	15/04/2021	15/04/2021	62.78	-	14.482	403.855	389.373	389.373	Good	0.36	1609	8.83	-165.7	39.3	26.3	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW272	21/10/2020	19/04/2021	19/04/2021	20.04	-	12.836	397.972	385.136	385.136	Good					205						Hydrasleeve
0207	MW273	26/03/2020	19/04/2021	19/04/2021	66.05	-	18.841	398.044	379.203	379.203	Good	0.62	396	9.9	-99.4	105.6	26.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW274	25/03/2020	17/04/2021	17/04/2021	31.82	-	14.516	399.947	385.431	385.431	Good	0.44	2647	7.91	-74.8	130.2	22.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW275	25/03/2020	17/04/2021	17/04/2021	55.42	-	14.47	399.911	385.441	385.441	Good	0.37	3164	8.07	-92.9	112.1	22.1	Medium	Light grey	Slight organic odour	No sheen	Hydrasleeve
0207	MW276	21/10/2020	19/04/2021	19/04/2021	19.9	-	14.793	400.474	385.681	385.681	Good	0.26	6537	7.85	-7.5	197.5	24.7	Medium	Clear	Slight organic odour	No sheen	Hydrasleeve
0207	MW278	25/03/2020	16/04/2021	16/04/2021	22.15	-	10.182	404.155	393.973	393.973	Good	0.1	1785	7.62	-26.1	178.9	26.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW279	25/03/2020	16/04/2021	16/04/2021	17.97	-	9.879	406.341	396.462	396.462	Good	0.51	2142	7.64	110.6	315.6	24	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW280	24/03/2020	17/04/2021	17/04/2021	29.88	-	12.713	398.486	385.773	385.773	Good	0.06	4357	7.68	-43.8	161.2	21.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW281	2/04/2020	20/04/2021	20/04/2021	18.49	-	10.224	396.856	386.632	386.632	Good	1.93	3744	6.99	100.4	305.4	22.9	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW282	24/03/2020	15/04/2021	15/04/2021	15.98	-	6.447	397.327	390.880	390.880	Good	3.18	1302	7.29	104.9	309.9	24.4	Clear	Clear	No odour	No sheen	Hydrasleeve

Table T1 Groundwater Gauging and Quality Parameter Field Measurement Results

Property ID	Well ID	Date Hydrasleeve Installed	Date Hydrasleeve Sampled	Gauging Date	Well Depth (mbtoc)	Depth to LNAPL (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Corrected Groundwater Elevation (mAHD)*	Condition of Gatic	DO (mg/L) *Field measurement*	EC (µS/cm) *Field measurement*	pH *Field measurement*	E_r (mV) *Field measurement*	E_h (mV)	Temp (°C) *Field measurement*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0207	MW283	24/03/2020	20/04/2021	20/04/2021	14.98	-	11.268	395.371	384.103	384.103	Good	0	2752	7.03	-8.8	196.2	24.1	Clear	Clear	Slight organic odour	No sheen	Hydrasleeve
0207	MW285	23/03/2020	15/04/2021	15/04/2021	10.77	-	6.676	398.331	391.655	391.655	Good	1.79	3056	8.29	66.4	271.4	22.3	Medium	Clear	No odour	No sheen	Hydrasleeve
0207	MW288	24/03/2020	21/04/2021	21/04/2021	21.94	-	17.289	402.161	384.872	384.872	Good	0.06	1567	7.65	-48.5	156.5	21.2	Turbid	Clear	No odour	No sheen	Hydrasleeve
0207	MW289	24/03/2020	21/04/2021	21/04/2021	64.96	-	61.919	402.072	340.153	340.153	Good	1.01	1222	7.83	38.5	243.5	24.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW290	24/03/2020	21/04/2021	21/04/2021	19.69	-	16.151	403.688	387.537	387.537	Good	0.11	5927	5.71	20.4	225.4	24.8	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW291	22/10/2020	21/04/2021	21/04/2021	56.05	-	23.394	403.709	380.315	380.315	Good	0.13	3126	7.1	47	252	27.9	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW292	24/03/2020	19/04/2021	19/04/2021	18.95	-	9.167	401.818	392.651	392.651	Good	0.04	12721	8.52	37.3	242.3	24.2	Medium	Clear	Slight organic odour	No sheen	Hydrasleeve
0207	MW293	24/03/2020	19/04/2021	19/04/2021	67.3	-	39.639	402.021	362.382	362.382	Good	2.23	8642	12.63	-16.8	188.2	25.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW294	24/03/2020	15/04/2021	15/04/2021	18.62	-	10.239	403.780	393.541	393.541	Good	0.17	2083	7.6	82.3	287.3	26.3	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW295	21/10/2020	15/04/2021	15/04/2021	69.47	-	9.643	402.837	393.194	393.194	Good	0.19	1354	9.92	-164.6	40.4	22.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW296	24/03/2020	15/04/2021	15/04/2021	20.11	-	13.864	399.155	385.291	385.291	Good	0.71	5611	7.05	94.2	299.2	23.5	Low	Clear	No odour	No sheen	Hydrasleeve
0207	MW297	22/10/2020	15/04/2021	15/04/2021	80.69	-	23.253	399.230	375.977	375.977	Good	0.02	2201	8.16	-107.6	97.4	26.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW299	20/10/2020	17/04/2021	17/04/2021	15.45	-	12.286	403.970	391.684	391.684	Good	0.94	13808	6.89	101.3	306.3	23.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0207	MW300	24/03/2020	17/04/2021	17/04/2021	16.46	-	14.632	403.715	389.083	389.083	Good	2.27	13418	6.5	159.6	364.6	23.6	Low	Clear	No odour	No sheen	Hydrasleeve. Note bailed in October 2020 however original hydrasleeve was redeployed.

* = Corrected Groundwater Elevation, $h_c = h_{measured} + (H_{PSH} * (r_{PSH}/r_{water}))$

mbtoc is metres below top of casing

mAHD is metres above Australian height datum

LNAPL is light non-aqueous phase liquid

DO is dissolved oxygen

EC is electrical conductivity

E_h is oxidation reduction potential

Oxidation reducation potential (E_r) measured with a platinum electrode and a silver/silver chloride reference electrode (E_r) and converted to E_h by $E_h = E_r + 205$ mV (based on a groundwater temperature of 21°C)

Temp is Temperature

µS/cm is microsiemens per centrimetre

ºC is degrees Celcius

mV is millivolts

Table T2 Groundwater PFAS Analytical Results

Location ID	Sample ID	Lab Report Number	Sample Date	PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFDA	PFNA	PFDoDA	PFTeDA	PFTrDA	PFUnDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MFOSAA	EtFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	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	0.02	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	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
PFAS NEMP Human Health Drinking Water				0.07											0.56																		
PFAS NEMP Ecological Freshwater 99% Species Protection									0.00023						19																		
MW002	1435_MW002_210416	EB2110965	16/04/2021	0.59	0.31	0.25	0.56	<0.02	0.03	<0.02	0.4	3.35	1.69	0.36	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.7	<0.05	<0.05	7.72
MW003	1435_MW003_210416	EB2110965	16/04/2021	13	1.98	2.49	8.89	0.35	4.08	<0.02	0.5	1.67	4.38	1.1	1.33	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.16	<0.05	<0.05	26.9
MW004	1435_MW004_210416	EB2110965	16/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	0.06
MW006	1435_MW006_210416	EB2110965	16/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW007	1435_MW007_210416	EB2110965	16/04/2021	0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	0.1
MW008	1435_MW008_210416	EB2110965	16/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW009	1435_MW009_210416	EB2110965	16/04/2021	9.34	0.92	1.16	4.99	0.31	4.35	<0.02	0.2	0.83	1.79	0.44	0.64	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	15.7
MW010	1435_MW010_210416	EB2110965	16/04/2021	0.84	0.27	0.25	0.73	0.02	0.11	<0.02	<0.1	0.2	0.48	0.12	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.29
MW011	1435_MW011_210416	EB2110965	16/04/2021	0.11	0.03	0.03	0.1	<0.02	0.01	<0.02	<0.1	0.03	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26
MW013	1435_MW013_210416	EB2110965	16/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW003	0207_MW003_210413	EB2110958	13/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW019	0207_MW019_210413	EB2110935	13/04/2021	0.03	<0.02	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03
MW021	0207_MW021_210419	EB2110949	19/04/2021	6.1	0.18	0.23	1.62	0.27	4.48	<0.02	<0.1	0.06	0.28	0.05	0.12	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.29
MW022	0207_MW022_210428	EB2111757	28/04/2021	0.55	0.02	0.02	0.18	<0.02	0.37	<0.02	<0.1	<0.02	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.63
MW032	0207_MW032_210419	EB2110956	19/04/2021	7.18	0.22	0.29	1.85	0.14	5.33	<0.02	<0.1	0.07	0.28	0.05	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.37
MW038	0207_MW038_210415	EB2110944	15/04/2021	0.72	0.04	0.04	0.22	0.02	0.5	<0.02	<0.1	<0.02	0.06	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.91
MW056	0207_MW056_210413	EB2110940	13/04/2021	0.45	0.05	0.04	0.33	<0.02	0.12	<0.02	<0.1	0.03	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.66
MW113	0207_MW113_210415	EB2110946	15/04/2021	0.45	<0.1	0.05	0.3	<0.02	0.15	<0.02	<0.1	<0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.57
MW114	0207_MW114_210428	EB2111764	28/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW118	0207_MW118_210428	EB2111764	28/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW122	0207_MW122_210428	EB2111764	28/04/2021	2.06	0.17	0.18	1.02	0.06	1.04	<0.02	<0.1	0.08	0.3	0.05	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.96
MW132	0207_MW132_210419	EB2110957	19/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW134	0207_MW134_210419	EB2112336	19/04/2021	0.04	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04
MW147	0207_MW147_210413	EB2110938	13/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW149	0207_MW149_210419	EB2110952	19/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW151	0207_MW151_210413	EB2110934	13/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW157	0207_MW157_210428	EB2111764	28/04/2021	11.1	0.56	0.56	3.39	0.37	7.68	<0.02	0.1	0.19	0.86	0.14	0.25	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	14.1
MW167	0207_MW167_210417	EB2110967	17/04/2021	8.23	0.62	0.54	2.73	0.26	5.5	<0.02	0.22	0.29	1.22	0.22	0.36	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	12
MW172	0207_MW172_210414	EB2110967	14/04/2021	5.34	0.3	0.3	1.71	0.09	3.63	<0.02	0.6	1.83	1.18	1.42	0.59	0.08	0.14	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.89	1.53	<0.05	14.3
MW173	0207_MW173_210414	EB2110967	14/04/2021	4.33	0.22	0.25	2.32	0.14	2.01	<0.02	0.3	0.96	0.93	0.5	0.46	<0.02	0.11	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.23	<0.05	<0.05	8.43
MW174	0207_MW174_210414	EB2110967	14/04/2021	0.11	<0.02	<0.02	0.06	<0.02	0.05	<0.02	<0.2	0.17	<0.11	0.05	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.72	<0.05	<0.05	1.05
MW178	0207_MW178_210417	EB2110967	17/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW179	0207_MW179_210416	EB2110967	16/04/2021	5.65	0.57	0.51	2.6	0.26	3.05	<0.02	0.33	0.3	1.34	0.25	0.35	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.56
MW187	0207_MW187_210417	EB2110967	17/04/2021	0.89	0.09	0.08	0.58	0.03	0.31	<0.02	<0.1	0.03	0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.25
MW189	0207_MW189_210417	EB2110967	17/04/2021	0.2	<0.02	<0.02	0.08	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.2
MW193	0207_MW193_210414	EB2110967	14/04/2021	42.9	3.91	4.23	17	1.84	25.9	<0.04	4.1	2.62	9.92	2.52	3.8	<0.04	0.04	<0.04	<0.1	<0.04	<0.04	<0.04	<0.1	<0.1	<0.1	<0.1	<0.04	<0.04	<0.05	0.14	<0.05	<0.05	76
MW198	0207_MW198_210414	EB2110967	14/04/2021	6.68	0.14	0.18	1.28	0.18	5.4	<0.02	0.1	0.19	0.43	0.14	0.21	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.25
MW201	0207_MW201_210415	EB2110967	15/04/2021	101	11.2	14.8	67.2	3.88	33.7	<0.04	1.9	3.85	17.3	2.57	4.67	<0.04	<0.04	<0.04	<0.1	<0.04	<0.04	<0.04	<0.1	<0.1	<0.1	<0.1	<0.04	<0.04	<0.05	0.43	<0.05	<0.05	162
MW202	0207_MW202_210417	EB2110967	17/04/2021	386	9.42	10.2	85.2	7.07	301	<0.37	2.5	4.47	17.2	2.71	7.51	<0.37	<0.37	<0.37	<0.92	<0.37	<0.37	0.55	<0.92	<0.92	<0.92	<0.92	<0.37	<0.37	<0.37	0.95	<0.37	<0.37	449
MW203	0207_MW203_210415	EB2110967	15/04/2021	19.8	2.25	2.34	11.8	0.72	8.04	<0.18	<0.9	0.92	3.66	0.63	1.14	<0.18	<0.18	<0.18	<0.45	<0.18	<0.18	<0.18	<0.45	<0.45	<0.45	<0.45	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	31.5
MW204	0207_MW204_210417	EB2110967	17/04/2021	107	14.2	15.6	94.1	3.77	13.2	<0.38	3	4.34	20.5	3.43	5.9	<0.38	<0.38	<0.38	<0.95	<0.38	<0.38	<0.38	<0.95	<0.95	<0.95	<0.95	<0.38	<0.38	<0.38	<0.38	<0.38	<0.38	178
MW205	0207_MW205_210417	EB2110967	17/04/2021	14.2	1.39	1.5	8.6	0.5	5.58	<0.02	0.33	0.53	2.28	0.43	0.65	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	21.8
MW206	0207_MW206_210414	EB2110967	14/04/2021	11	0.61	0.72	4.89	0.37	6.07	<0.02	0.2	0.29	1.11	0.31	0.55	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	15.1
MW221	0207_MW221_210414	EB2110967	14/04/2021	3.4	0.35	0.34	1.69	0.12	1.71	<0.02	0.2	0.28	0.92	0.25	0.36	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.22
MW222	0207_MW222_210414	EB2110967	14/04/2021	38	2.17	2.34	14.4	1.51	23.6	<0.1	2.27	5.65	9.84	4.62	6.37	<0.1	1.33	<0.1	<0.25	<0.1	<0.1	<0.1	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	3.14	0.13	<0.1	77.4
MW223	0207_MW223_210414	EB2110967	14/04/2021	27.5	1.22	1.29	8.92	0.97	18.6	<0.07	6.4	37.4	15.1	10.2	9.72	<0.07	2.24	<0.07	<0.18	<0.07	<0.07	<0.07	<0.18	<0.18	<0.18	<0.18	<0.07	<0.07	<0.07	6.65	0.74	<0.07	119
MW229	0207_MW229_210414	EB2110967	20/04/2021	39.8	0.77	1	7.48	0.59	32.3	<0.05	<0.3	0.32	1.82	0.17	0.54	<0.05	<0.05	<0.05	<0.13	<0.05	<0.05	<0.05	<0.13	<0.13	<0.13	<0.13	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	45.1
MW230	0207_MW230_210414	EB2110967	14/04/2021	17.3	1.11	1.2	6.31	0.78	11	<0.04	4.8	25.3	12.3	7.22	5.87	<0.04	0.94	<0.04	<0.09	<0.04	<0.04	<0.04	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	2.93	<0.05	<0.05	79.8
MW232	0207_MW232_210414	EB2110967	14/04/2021	24.7	0.33	0.49	3.52	0.44	21.2	<0.04	0.7	2.34	1.71	1.2	1.42	0.42	0.37	<0.04	<0.1	<0.04	<0.04	<0.04	<0.1	<0.1	<0.1	<0.1	<0.04	<0.04	<0.05	0.24	2.55	<0.05	36.9
MW233	0207_MW233_210417	EB2110967	17/04/2021	1.5	0.21	0.17	0.96	0.03	0.54	<0.02	<0.1	0.06	0.21	0.04	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.29
MW235	0207_MW235_210414	EB2110967	14/04/2021	25.4	6.73	7.34	20.1	0.4	5.29	<0.04	1.8	2.72	12.8	1.26	1.04	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	<0.04	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	59.5
MW236	0207_MW236_210414	EB2110967	14/04/2021	14.4	3.56	2.64	9.33	0.52	5.08	<0.02	0.98	1.09	4.55	0.48	0.75	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	29
MW241	0207_MW241_210414	EB2110967	14/04/2021	5.21	0.13	0.16	1.44	0.11	3.77	<0.02	<0.1	0.09	0.21	0.06	0.14	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.11
MW242	0207_MW242_210420	EB2110967	20/04/2021	1.17	0.07	0.08	0.47	0.03	0.7	<0.02	<0.1	0.04	0.12	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.57
MW245	0207_MW245_210420	EB2110967	20/04/2021	0.32	0.03	0.04	0.2	<0.02	0.12	<0.02	<0.1	<0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.46
MW249	0207_MW249_210414	EB2110967	14/04/2021	4.19	0.71	0.94	4.04	0.06	0.15	<0.02	0.2	0.43	1.41	0.17	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.22
MW252	0207_MW252_210414	EB2110967	14/04/2021	28.5	2.41	2.7	11.5	0.64	17	<0.1	0.83	1.55	3.43	0.76	0.97	<0.1	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	41.8
MW253	0207_MW253_210414	EB2110967	14/04/2021	25	1.26	1.66	10.4	0.75	14.6	<0.02	0.4	0.51	1.88	0.28	0.52	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	32.3
MW254	0207_MW254_210414	EB2110967	14/04/2021	17.1	1.28	1.17	7.77	0.16	9.32	<0.02	0.7	0.9	2.61	0.22	0.4	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.08	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	24.6
MW255	0207_MW255_210413	EB2110967	13/04/2021	0.15	<0.02	0.02	0.11	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17
MW257	0207_MW257_210417	EB2110967	17/04/2021	0.17	<0.02	<0.02	0.09	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17
MW262	0207_MW262_210419	EB2110967	19/04/2021	0.5	0.05	0.04	0.24	0.02	0.26	<0.02	<0.1	<0.02	0.04	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.68
MW264	0207_MW264_210413	EB2110967	13/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW265	0207_MW265_210412	EB2110967	12/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW266	0207_MW266_210420	EB2110967	20/04/2021	6.57	0.78	0.69	3.38	0.22	3.19	<0.02	0.24	0.32	1.28	0.23	0.34	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	10.7
MW267	0207_MW267_210415	EB2110947	15/04/2021	0.04	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.2	<0.3	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04
MW268	0207_MW268_210415	EB2110947	15/04/2021	0.43	0.04	0.04	0.25	<0.02	0.18	<0.02	<0.1	<0.02	0.07	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.59
MW269	0207_MW269_210415	EB2110947	15/04/2021	0.14	<0.02	<0.02	0.04	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.14
MW270	0207_MW270_210415	EB2110947	15/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW271	0207_MW271_210415	EB2110947	15/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW272	0207_MW272_210419	EB2110967	19/04/2021	0.58	0.08	0.08	0.42	<0.02	0.16	<0.02	<0.1	0.03	0.12	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.91

Table T2 Groundwater PFAS Analytical Results

		PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFDA	PFNA	PFDoDA	PFTeDA	PFTrDA	PFUnDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MFOSAA	EtFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	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	0.02	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	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
PFAS NEMP Human Health Drinking Water		**0.07**											**0.56**																		
PFAS NEMP Ecological Freshwater 99% Species Protection							*0.00023*						*19*																		
Location ID	**Sample ID**	**Lab Report Number**	**Sample Date**																												
MW273	0207_MW273_210419	EB2110967	19/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW274	0207_MW274_210417	EB2110967	17/04/2021	<0.01	0.07	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07
MW275	0207_MW275_210417	EB2110967	17/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW276	0207_MW276_210419	EB2110967	19/04/2021	**19.6**	0.83	1.17	8.05	0.66	*11.5*	<0.02	0.3	0.35	1.57	0.26	**0.57**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	25.3
MW278	0207_MW278_210416	EB2110967	16/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW279	0207_MW279_210416	EB2110967	16/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW280	0207_MW280_210417	EB2110967	17/04/2021	**0.25**	0.04	0.02	0.16	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.31
MW281	0207_MW281_210420	EB2110959	20/04/2021	**3.68**	0.26	0.28	1.33	0.14	*2.35*	<0.02	<0.1	0.1	0.38	0.1	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.14
MW282	0207_MW282_210415	EB2110967	15/04/2021	**0.97**	0.08	0.07	0.43	<0.02	*0.54*	<0.02	<0.1	<0.02	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.16
MW283	0207_MW283_210420	EB2110958	20/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW285	0207_MW285_210415	EB2110967	15/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW288	0207_MW288_210421	EB2110961	21/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW289	0207_MW289_210421	EB2110961	21/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW290	0207_MW290_210421	EB2110962	21/04/2021	**0.25**	0.02	0.02	0.23	<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	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.31
MW291	0207_MW291_210421	EB2110962	21/04/2021	0.03	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.07	<0.05	<0.05	0.1
MW292	0207_MW292_210419	EB2110954	19/04/2021	**0.31**	<0.02	<0.02	0.17	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.31
MW293	0207_MW293_210419	EB2110954	19/04/2021	0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
MW294	0207_MW294_210415	EB2110947	15/04/2021	**1.27**	0.08	0.1	0.62	0.04	*0.65*	<0.02	0.4	0.77	0.36	0.22	0.13	0.02	0.05	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.44
MW295	0207_MW295_210415	EB2110947	15/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.21	<0.05	<0.05	0.21
MW296	0207_MW296_210415	EB2110942	15/04/2021	**1.95**	0.22	0.23	1.33	0.06	*0.62*	<0.02	<0.1	0.07	0.32	0.04	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.95
MW297	0207_MW297_210415	EB2110942	15/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW299	0207_MW299_210417	EB2110967	17/04/2021	**24.4**	4.04	4.09	13.7	0.61	*10.7*	<0.21	1.5	2.08	8.36	1.73	**2.38**	<0.21	<0.21	<0.21	<0.53	<0.21	<0.21	<0.21	<0.53	<0.53	<0.53	<0.53	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	49.2
MW300	0207_MW300_210417	EB2110967	17/04/2021	**108**	9.74	10.3	47.8	4.37	*59.8*	<0.1	3.46	4.59	19.1	4.29	**8.36**	<0.1	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	0.16	<0.1	<0.1	172

LOR is limit of reporting
µg/L is micrograms per litre
-' denotes no analysis undertaken
<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
NHMRC is National Health Medical Research Council
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values

Table T3 Surface Water Quality Parameter Field Measurement Results

Property ID	Location ID	Sample Date	DO (mg/L) *Field measurement*	EC (µS/cm) *Field measurement*	pH *Field measurement*	E_r (mV) *Field measurement*	E_h (mV)	Temp (°C) *Field measurement*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0207	SW004	13/04/2021	6.96	808	7.99	71.6	276.6	21.7	Medium	Clear	Slight organic odour	No sheen	Grab sample
0207	SW009	13/04/2021	5.62	228.3	7.7	142.9	347.9	21.1	Medium	Clear	Slight organic odour	No sheen	Grab sample
0207	SW010	13/04/2021	3.4	218.3	7.07	124.1	329.1	23.5	Low	Clear	No odour	No sheen	Grab sample
0207	SW011	13/04/2021	1.62	194.4	6.8	134.9	339.9	20.9	Medium	Clear	No odour	Biosheen appearance	Grab sample
0207	SW012	13/04/2021	4.64	181.5	7.32	128.2	333.2	28.0	Medium	Clear	No odour	No sheen	Grab sample
0207	SW013	13/04/2021	1.88	169	7.21	93.9	298.9	22.5	Medium	Clear	Slight organic odour	No sheen	Grab sample
0207	SW019	23/03/2021	-	-	-	-	-	-	-	-	-	-	Grab samples. No quality parameter field measurements were collected as a functional water quality meter was not available.
0207	SW021	23/03/2021	-	-	-	-	-	-	-	-	-	-	
0207	SW024	23/03/2021	-	-	-	-	-	-	-	-	-	-	
0207	SW025	23/03/2021	-	-	-	-	-	-	-	-	-	-	
0207	SW026	23/03/2021	-	-	-	-	-	-	-	-	-	-	
0207	SW027	23/03/2021	-	-	-	-	-	-	-	-	-	-	
0207	SW028	15/04/2021	8.87	1127	9.18	87.5	292.5	21.7	Low	Clear	Slight organic odour	No sheen	Grab sample
0207	SW032	15/04/2021	2.4	529.5	7.79	28.3	233.3	23.6	Medium	Clear	Slight organic odour	No sheen	Grab sample
0207	SW040	12/04/2021	3.68	247.2	7.02	48.4	253.4	22.1	Medium	Clear	No odour	No sheen	Grab sample
0207	SW043	12/04/2021	8.71	449.8	7.71	84.9	289.9	28.9	Turbid	Brown	No odour	No sheen	Grab sample from pooled water in road
0207	SW056	15/04/2021	4.94	457	7.81	80.1	285.1	26.9	Medium	Clear	Slight organic odour	No sheen	Grab sample
0207	SW059	-	-	-	-	-	-	-	-	-	-	-	Dry
0207	SW059	20/04/2021	6.54	1302	7.9	90.3	295.3	21.5	Clear	Clear	Slight organic odour	No sheen	Grab sample
0207	SW063	23/03/2021	-	-	-	-	-	-	-	-	-	-	Grab samples. No quality parameter field measurements were collected as a functional water quality meter was not available.
0207	SW065	23/03/2021	-	-	-	-	-	-	-	-	-	-	
0207	SW066	23/03/2021	-	-	-	-	-	-	-	-	-	-	

* = Corrected Groundwater Elevation, $h_c = h_{measured} + (H_{PSH} * (r_{PSH}/r_{water}))$

DO is dissolved oxygen

EC is electrical conductivity

E_h is oxidation reduction potential

Oxidation reducation potential (E_r) measured with a platinum electrode and a silver/silver chloride reference electrode (E_r) and converted to E_h by $E_h = E_r + 205$ mV (based on a groundwater temperature of 21°C)

Temp is Temperature

µS/cm is microsiemens per centrimetre

ºC is degrees Celcius

mV is millivolts

Table T4 Surface Water PFAS Analytical Results

		PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFDoDA	PFTeDA	PFTrDA	PFUnDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MFOSAA	EtFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	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	0.02	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	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
NHMRC (2019) PFAS Recreational Water		**2**											**10**																		
PFAS NEMP Ecological Freshwater 99% Species Protection							*0.00023*						*19*																		
Location ID	**Sample ID**	**Lab Report Number**	**Sample Date**																												
SW004	0207_SW004_210413	EB2110967	13/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW009	0207_SW009_210413	EB2110967	13/04/2021	0.9	0.05	0.04	0.27	<0.02	*0.63*	<0.02	<0.1	0.04	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.13
SW010	0207_SW010_210413	EB2110967	13/04/2021	0.14	<0.02	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15
SW011	0207_SW011_210413	EB2110967	13/04/2021	0.47	0.04	0.03	0.15	<0.02	*0.32*	<0.02	<0.1	0.03	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.65
SW012	0207_SW012_210413	EB2110967	13/04/2021	0.78	0.05	0.03	0.21	<0.02	*0.57*	<0.02	<0.1	0.04	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1
SW013	0207_SW013_210413	EB2110967	13/04/2021	0.74	0.04	0.03	0.18	<0.02	*0.56*	<0.02	<0.1	0.03	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.93
SW019	0207_SW019_210323	EB2108522	23/03/2021	0.41	0.02	<0.02	0.11	<0.02	*0.3*	<0.02	<0.1	0.06	0.1	0.04	0.06	0.05	0.04	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.07	0.13	<0.05	0.98
SW021	0207_SW021_210323	EB2108522	23/03/2021	0.75	0.04	0.03	0.17	<0.02	*0.58*	<0.02	<0.1	0.09	0.1	0.03	0.03	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	0.08	<0.05	1.17
SW024	0207_SW024_210323	EB2108522	23/03/2021	3.18	0.37	0.32	2.12	0.08	*1.06*	<0.02	0.3	0.35	0.68	0.03	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.34
SW025	0207_SW025_210323	EB2108522	23/03/2021	0.6	0.04	0.04	0.24	<0.02	*0.36*	<0.02	<0.1	<0.02	0.08	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.76
SW026	0207_SW026_210323	EB2108522	23/03/2021	1.07	0.08	0.05	0.31	0.02	*0.76*	<0.02	<0.1	0.05	0.13	<0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.43
SW027	0207_SW027_210323	EB2108522	23/03/2021	0.48	<0.02	<0.02	0.08	<0.02	*0.4*	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.51
SW028	0207_SW028_210415	EB2110967	15/04/2021	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW032	0207_SW032_210415	EB2110947	15/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW040	0207_SW040_210412	EB2110967	12/04/2021	<0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW043	0207_SW043_210412	EB2110967	12/04/2021	0.01	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01
SW056	0207_SW056_210415	EB2110947	15/04/2021	0.02	<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	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
SW059	0207_SW059_210420	EB2110958	20/04/2021	0.03	<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	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03
SW063	0207_SW063_210323	EB2108522	23/03/2021	0.37	<0.02	<0.02	0.08	<0.02	*0.29*	<0.02	<0.1	0.04	0.08	0.03	0.04	0.04	0.04	0.02	<0.05	<0.02	0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	0.13	<0.05	0.81
SW065	0207_SW065_210323	EB2108522	23/03/2021	0.53	0.1	0.04	0.22	<0.02	*0.31*	<0.02	<0.1	<0.02	0.08	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.76
SW066	0207_SW066_210323	EB2108522	23/03/2021	1.28	0.07	0.06	0.32	0.02	*0.96*	<0.02	<0.1	0.04	0.13	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.66

LOR is limit of reporting
µg/L is micrograms per litre
-' denotes no analysis undertaken
<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
NHMRC is National Health Medical Research Council
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values

Table T5 Sediment Field Observations

Property ID	Location ID	Sample Date	Sample Description	Odour	Sheen	Sample Method / Comments
0207	SD007	12/04/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.). Collected from tyre tracks in roadway	No odour	No sheen	Grab sample
0207	SD010	23/03/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD011	23/03/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD013	13/04/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD015	23/03/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD016	23/03/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD017	15/04/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.), trace of medium grained sand	No odour	No sheen	Grab sample
0207	SD018	15/04/2021	Silty CLAY, brown, orange mottle, moist, medium-high plasticity, soft.	No odour	No sheen	Grab sample
0207	SD022	23/03/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD024	23/03/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD025	23/03/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD032	15/04/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD036	13/04/2021	Silty CLAY, dark brown, slightly moisot, low-medium plasticity, stiff, with roots, trace of bitumen	No odour	No sheen	Grab sample
0207	SD037	13/04/2021	Silty CLAY, brown, moist, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD038	13/04/2021	Silty CLAY, dark brown, dry, low plasticity, hard, trace of bitumen.	No odour	No sheen	Grab sample
0207	SD040	12/04/2021	Silty CLAY, dark brown, slightly moisot, low-medium plasticity, stiff, with roots, trace of bitumen	No odour	No sheen	Grab sample
0207	SD045	20/04/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD070	15/04/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD102	13/04/2021	Silty CLAY, brown, moist, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD105	13/04/2021	Silty CLAY, brown, slightly moist, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD106	23/03/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample
0207	SD107	23/03/2021	Silty CLAY, brown, saturated, medium plasticity, very soft, with organic matter (roots, leaves etc.).	No odour	No sheen	Grab sample

Table T6 Sediment PFAS Analytical Results

	PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFDoDA	PFTeDA	PFTrDA	PFUnDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	EtFOSAA	MFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	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	0.0002	0.0002	0.0002	0.0002	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	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002
SD007	0207_SD007_210412	doctor	EB2110967	Normal	12/04/2021	0.0004	<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	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0004
SD010	0207_SD010_210323	DC2 onsite	EB2108522	Normal	23/03/2021	0.109	0.0008	0.0008	0.0095	0.001	0.0997	<0.0002	<0.001	0.0011	0.003	0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.116
SD011	0207_SD011_210323	DC2 offsite	EB2108522	Normal	23/03/2021	0.0394	<0.0002	<0.0002	0.0023	0.0004	0.0371	0.0006	<0.001	0.0002	0.0005	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0416
SD013	0207_SD013_210413	DC2 offsite	EB2110967	Normal	13/04/2021	0.0594	0.0007	0.0007	0.0035	<0.0005	0.0559	0.0032	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	0.0007	0.0017	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0664
SD015	0207_SD015_210323	DC1 on-site	EB2108522	Normal	23/03/2021	0.0215	<0.0002	<0.0002	0.0006	<0.0002	0.0209	0.0016	<0.001	0.0004	0.0007	0.0003	0.0005	0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0252
SD016	0207_SD016_210323	DC3 onsite	EB2108522	Normal	23/03/2021	0.0216	0.0004	0.0002	0.0035	0.0002	0.0181	0.0005	0.001	0.0016	0.0019	0.0009	0.0011	0.0011	0.0007	0.0009	<0.0005	0.0003	0.0007	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0331
SD017	0207_SD017_210415	DC3 offsite	EB2110947	Normal	15/04/2021	0.0166	<0.0002	<0.0002	0.0002	<0.0002	0.0164	0.0033	<0.001	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	0.0022	0.0015	<0.0005	0.0003	0.0018	<0.0002	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	0.0009	<0.0005	0.0276
SD018	0207_SD018_210415	Oakey dwn	EB2110947	Normal	15/04/2021	0.0002	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0002
SD022	0207_SD022_210323	DC1 onsite	EB2108522	Normal	23/03/2021	0.0183	<0.0002	<0.0002	0.0011	<0.0002	0.0172	0.0009	<0.001	0.0003	0.0004	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0202
SD024	0207_SD024_210323	DC2 onsite	EB2108522	Normal	23/03/2021	0.0715	0.0008	0.0009	0.0091	0.001	0.0624	<0.0002	<0.001	0.0012	0.0026	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0784
SD025	0207_SD025_210323	DC3 onsite	EB2108522	Normal	23/03/2021	0.0111	<0.0002	<0.0002	0.0005	<0.0002	0.0106	0.0009	<0.001	0.0005	0.0004	0.0004	0.0008	0.0017	0.0031	0.0023	0.0009	0.0013	0.0016	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.025
SD032	0207_SD032_210415	Oakey up	EB2110947	Normal	15/04/2021	<0.0002	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD036	0207_SD036_210413	Oakey dow	EB2110967	Normal	13/04/2021	0.012	<0.0002	<0.0002	0.0006	<0.0002	0.0114	0.0008	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	0.0012	0.0021	<0.0005	0.0002	0.0004	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0169
SD037	0207_SD037_210413	Oakey dwn	EB2110967	Normal	13/04/2021	0.0088	<0.0002	<0.0002	0.001	<0.0002	0.0078	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.0004	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0094
SD038	0207_SD038_210413	Oakey dwn WB	EB2110967	Normal	13/04/2021	0.0016	<0.0002	<0.0002	<0.0002	<0.0002	0.0016	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0019
SD040	0207_SD040_210412	Oakey up	EB2110967	Normal	12/04/2021	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0014	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0004
SD045	0207_SD045_210420	Oakey dwn WB	EB2110958		20/04/2021	0.008	<0.0002	<0.0002	0.0006	<0.0002	0.0074	0.0002	<0.001	<0.0002	0.0003	0.0002	0.0007	0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0099
SD070	0207_SD070_210415	WC	EB2110967	Normal	15/04/2021	<0.0002	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0002
SD102	0207_SD102_210413	Oakey dwn	EB2110967	Normal	13/04/2021	0.0135	<0.0002	<0.0002	0.0009	<0.0002	0.0126	0.0012	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0147
SD105	0207_SD105_210413	Oakey dwn	EB2110967	Normal	13/04/2021	0.0161	<0.0002	<0.0002	0.0008	<0.0002	0.0153	0.0004	<0.001	<0.0002	0.0004	0.0002	0.0016	0.0002	0.0009	0.0006	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0204
SD106	0207_SD106_210323	DC1 onsite	EB2108522	Normal	23/03/2021	0.157	0.0004	0.0004	0.0046	0.0005	0.152	0.0034	<0.001	0.0009	0.0017	0.0003	0.001	0.0004	0.0006	<0.0002	<0.0005	<0.0002	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.167
SD107	0207_SD107_210323	DC3 onsite	EB2108522	Normal	23/03/2021	0.0193	<0.0002	<0.0002	0.0023	<0.0002	0.017	0.0007	0.001	0.0014	0.0014	0.0012	0.0017	0.0014	0.0014	0.002	<0.0005	0.0007	0.0013	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0335

LOR is limit of reporting
mg/kg is milligrams per kilogram
µg/kg is micrograms per kilogram
-' denotes no analysis undertaken
<' denotes concentration is less than
Denotes first time detection above LOR

Appendix C

Analytical Data Validation

Appendix C Analytical Data Validation

DATA VALIDATION REPORT

Project No.:	60612563	**Validation by:** CM		**Date:**	19/05/21
Client:	Department of Defence				
Site:	Army Aviation Centre Oakey				
Matrix type:	Groundwater, surface water, sediment	**Data verified by:** FL		**Date:**	20/05/21
No. of primary samples:	94 groundwater, 21 surface water, 22 sediment				
Laboratory:	ALS (Brisbane), NMI (Sydney)	**Project Manager:** JP			
Lab reference:	EB2108522; EB2110934; EB2110935; EB2110938; EB2110940; EB2110942; EB2110944; EB2110946; EB2110947; EB2110949; EB2110952; EB2110954; EB2110956; EB2110957; EB2110958; EB2110959; EB2110961; EB2110962; EB2110965; EB2110967; EB2111757; EB2111764; EB2112336; AECO06/210423; AECO06/210423_2				

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 therefore considered appropriate for use to meet the project objectives.

Field QA/QC

Sampling personnel	Sampling was conducted by Jessica Roy and Camden McCosker on 23 March 2021 and between 12 and 28 April 2021.
Sampling Methodology	Samples were collected using appropriate methods as identified within the main body of the report.
Chain of Custody (COC)	COC documents completed as per AECOM procedures.
Rinsate Blank (refer to **Table C1**)	Rinsate blank samples were collected at a frequency of one per day of sampling when the interface probe was in use (eight in total). All rinsates were collected from the decontaminated interface probe. Concentrations were reported below the LOR for all analytes tested.
Frequency of field QC	Field duplicate (inter-laboratory duplicates) and triplicates (inter-laboratory duplicates) were collected in at a frequency of one in ten primary samples (eleven duplicates for groundwater, eleven triplicates for groundwater, and three of each for surface water and sediment). These frequencies exceed the expected field QC frequency of 10%.
Handling and preservation	Primary, duplicate and triplicate samples were received preserved and chilled at the laboratory. Sample receipt temperature was within the recommended range (<6°C) for all batches. All samples were received at the laboratory in appropriate sample containers with no sample container / preservation non-compliances noted.

Laboratory QA/QC

Tests requested/reported	Samples were analysed and reported as requested on the COC.

Holding time compliance	All samples were extracted and analysed within recommended holding times.
Laboratory Accreditation	The laboratory analysis was conducted by ALS Environmental Pty Ltd (Brisbane) a NATA accredited laboratory. The triplicate samples were analysed at the national Measurement Institute (Sydney), also a NATA accredited laboratory.
Frequency of laboratory QC	The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, except: • Matrix spikes for PFAS (0.00%) which is below the expected rate of 5.00% in the following batches: - EB2108522 (11 samples in batch) - EB2110949 (15 samples in batch) - EB2110952 (15 samples in batch) - EB2110954 (15 samples in batch) - EB2110956 (15 samples in batch) - EB2110957 (15 samples in batch) - EB2110958 (15 samples in batch) - EB2110959 (15 samples in batch) • Matrix spikes for PFAS (3.03%) which is below the expected rate of 5.00% in the following batches: - EB2110947 (33 samples in batch) • Matrix spikes for PFAS (2.94%) which is below the expected rate of 5.00% in the following batches: - EB2110967 (68 samples in batch) • Laboratory duplicates for PFAS (0.00%) which is below the expected rate of 10.00% in the following batches: - EB2108522 (11 samples in batch) • Laboratory duplicates for PFAS (6.25%) which is below the expected rate of 10.00% in the following batches: - EB2110961 (16 samples in batch) - EB2110962 (16 samples in batch) - EB2110965 (16 samples in batch) • Laboratory duplicates for PFAS (9.09%) which is below the expected rate of 10.00% in the following batches: - EB2110947 (33 samples in batch) • Laboratory duplicates for PFAS (6.67%) which is below the expected rate of 10.00% in the following batches: - EB2110949 (15 samples in batch) - EB2110952 (15 samples in batch) - EB2110954 (15 samples in batch) - EB2110956 (15 samples in batch) - EB2110957 (15 samples in batch) - EB2110958 (15 samples in batch) - EB2110959 (15 samples in batch) • Laboratory duplicates for PFAS (8.82%) which is below the expected rate of 10.00% in the following batches: - EB2110967 (68 samples in batch) The reason for insufficient matrix spikes and laboratory duplicates is unknown as the laboratory was provided with sufficient sample volume, however as all other QC results met control limits this is not expected to impact data quality.
Method Blank	Method blank concentrations were not detected above the LOR for all analytes tested.
Laboratory duplicate RPDs	Laboratory duplicate Relative Percentage Differences (RPD) were within control limits for all samples.
Laboratory control spike recovery	Laboratory Control Spikes (LCS) recoveries exist across primary laboratory batches with the recovery recorded as greater that the upper control limit.

Matrix spike recovery	All Matrix Spike (MS) recoveries (where reported) were within control limits, except: • PFBS, PFPeS, PFHpS, PFPeA, PFHxA and MeFOSA in 0207_SD024_210323 where matrix recovery was greater than the upper data quality objective in EB2108522 • PFHxS and PFOS in 0207_SD024_210323 where MS recovery was not determined due to background level greater than or equal to four times spike level in EB2108522 • PFHxS in an anonymous sample where MS recovery was not determined due to background level greater than or equal to four times spike level in EB210961 • PFHxS in an anonymous sample where MS recovery was not determined due to background level greater than or equal to four times spike level in EB210962 • PFHxS in 1435_MW010_210416 where MS recovery was not determined due to background level greater than or equal to four times spike level in EB210965 This is not expected to impact data quality.
Surrogate spike recovery	Surrogate spike recoveries were within control limits.
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	Limits of Reporting (LORs) were sufficiently low to enable assessment against adopted screening levels except for PFOS for NEMP (HEPA, 2018) ecological guideline values for the 99% protection of freshwater species. The potential exists for concentrations of PFOS to be above the adopted guideline, but below the laboratory LOR. This should be taken into consideration when interpreting and using this data quantitatively where results are reported below LOR.
Field duplicate RPDs (refer to **Tables C1, C2** and **C3**)	Field duplicate RPDs were reported within control limits except the following (the sample with the higher concentration is in bold): • **0207_MW172_210414** and 0207_QC145_210414 for 8:2FTS (56%) • **0207_SD102_210413** and 0207_QC144_210413 for PFOS (141%) The difference between SD102 and QC144 is considered to be attributed to sample heterogeneity. As there is no adopted guideline for these PFAS compounds in sediment, the identified elevated RPD does not affect the interpretation of the data against guidelines but should be taken into consideration when interpreting the data quantitatively. The reason(s) for the other exceedance is unknown. As the exceedance is marginally above 30%, this is not expected to affect the interpretation of the data.
Field triplicate RPDs (refer to **Tables C1, C2** and **C3**)	Field triplicate RPDs were reported within control limits with the exception of the following (the sample with the higher concentration is in bold): • **0207_MW172_210414** and 0207_QC245_210414 for 8:2 FTS (48%) • **0207_MW172_210414** and 0207_QC245_210414 for PFOS (33%) • **0207_MW230_210414** and 0207_QC246_210414 for PFHpS (46%) • **0207_MW230_210414** and 0207_QC246_210414 for PFHpA (40%) • **0207_MW230_210414** and 0207_QC246_210414 for PFHxA (39%) • **0207_MW230_210414** and 0207_QC246_210414 for PFPeS (36%) • **0207_MW230_210414** and 0207_QC246_210414 for PFPeA (45%) • **0207_MW230_210414** and 0207_QC246_210414 for PFOS (53%) • **0207_MW230_210414** and 0207_QC246_210414 for PFOA (48%) • **0207_MW230_210414** and 0207_QC246_210414 for PFHxS (36%) • **0207_MW300_210417** and 0207_QC251_210417 for PFBA (32%) • **0207_MW300_210417** and 0207_QC251_210417 for PFHpS (74%) • **0207_MW300_210417** and 0207_QC251_210417 for PFHpA (49%) • **0207_MW300_210417** and 0207_QC251_210417 for PFHxA (46%) • **0207_MW300_210417** and 0207_QC251_210417 for PFPeS (51%)

	• **0207_MW300_210417** and 0207_QC251_210417 for PFPeA (45%) • **0207_MW300_210417** and 0207_QC251_210417 for PFBOS (47%) • **0207_MW300_210417** and 0207_QC251_210417 for PFOA (48%) • **0207_MW300_210417** and 0207_QC251_210417 for PFHxS (34%) • **0207_MW276_210419** and 0207_QC253_210419 for PFHpS (49%) • **0207_MW276_210419** and 0207_QC253_210419 for PFPeS (33%) • **0207_MW276_210419** and 0207_QC253_210419 for PFOS (38%) • **0207_MW276_210419** and 0207_QC253_210419 for PFOA (30%) The differences are considered to be due to different extraction methods between laboratories. As there are no adopted guidelines for the majority of these PFAS compounds, the identified elevated RPD does not affect the interpretation of the data against guidelines but should be taken into consideration when interpreting the data quantitatively. For compounds with adopted guidelines (i.e. PFOS and PFHxS in groundwater), it is noted that the primary sample consistently reported the higher concentration.
Other	
Other observations	N/A

Table C1 Groundwater Duplicate and Triplicate Analytical Results

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		Sample ID	0207_MW255_210413	0207_QC142_210413		0207_QC242_210413		0207_MW172_210414	0207_QC145_210414		0207_QC245_210414		0207_MW230_210414	0207_QC146_210414		0207_QC246_210414		0207_MW282_210415	0207_QC147_210415		0207_QC247_210415	
		Sample Date	13/04/2021	13/04/2021		13/04/2021	RPD	14/04/2021	14/04/2021	RPD	14/04/2021	RPD	14/04/2021	14/04/2021	RPD	14/04/2021	RPD	15/04/2021	15/04/2021	RPD	15/04/2021	RPD
		Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Chemical	**Units**	**LOR**																				
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	0	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	0	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
6:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	0	0.89	0.86	3	0.82	8	2.93	2.76	6	**<0.01**	NC	<0.05	<0.05	NC	<0.01	NC
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	0	**1.53**	**0.86**	**56**	**0.94**	**48**	<0.05	<0.05	NC	0.011	NC	<0.05	<0.05	NC	<0.01	NC
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	0	<0.05	<0.05	NC	<0.02	NC	<0.09	<0.09	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	0	<0.02	<0.02	NC	<0.01	NC	<0.04	<0.04	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
EtFOSE	µg/L	0.05	<0.05	<0.05	NC	<0.05	0	<0.05	<0.05	NC	<0.05	NC	<0.09	<0.09	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	0	<0.05	<0.05	NC	<0.02	NC	<0.09	<0.09	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	0	<0.02	<0.02	NC	<0.01	NC	<0.04	<0.04	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
MeFOSE	µg/L	0.05	<0.05	<0.05	NC	<0.05	0	<0.05	<0.05	NC	<0.05	NC	<0.09	<0.09	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC
PFBS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	0.02	0	0.3	0.45	40	0.32	6	1.11	1.02	8	0.94	17	0.08	0.07	13	0.084	5
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	NC	<0.05	0	0.6	0.56	7	0.54	11	4.8	5.1	6	3.7	26	<0.1	<0.1	NC	<0.05	NC
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	0	<0.02	<0.02	NC	<0.01	NC	<0.04	<0.04	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	0	0.08	0.07	13	0.046	54	<0.04	<0.04	NC	0.017	0	<0.02	<0.02	NC	<0.01	NC
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	0	<0.02	<0.02	NC	<0.01	NC	<0.04	<0.04	NC	<0.01	0	<0.02	<0.02	NC	<0.01	NC
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	0	0.09	0.1	11	0.076	17	0.78	0.6	26	**0.49**	**46**	<0.02	<0.02	NC	0.01	0
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	0	1.42	1.54	8	1.3	9	7.22	6.82	6	**4.8**	**40**	<0.02	<0.02	NC	<0.01	NC
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	0.014	0	1.18	1.37	15	1.1	7	12.3	12.8	4	**8.3**	**39**	0.02	<0.02	NC	0.017	16
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	0	0.14	0.13	7	0.12	15	0.94	0.86	9	0.72	27	<0.02	<0.02	NC	<0.01	NC
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	0	<0.02	<0.02	NC	<0.01	NC	<0.04	<0.04	NC	<0.01	0	<0.02	<0.02	NC	<0.01	NC
PFPeS	µg/L	0.02 : 0.01 (Interlab)	0.02	0.02	NC	0.019	5	0.3	0.33	10	0.27	11	1.2	1.01	17	**0.83**	**36**	0.07	0.06	15	0.056	22
PFPeA	µg/L	0.02	<0.02	<0.02	NC	<0.02	0	1.83	2.02	10	1.6	13	25.3	25.2	0	**16**	**45**	<0.02	<0.02	NC	<0.02	NC
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	0	<0.05	<0.05	NC	<0.02	NC	<0.09	<0.09	NC	<0.02	0	<0.05	<0.05	NC	<0.02	NC
PFTrDA	µg/L	0.02	<0.02	<0.02	NC	<0.02	0	<0.02	<0.02	NC	<0.02	NC	<0.04	<0.04	NC	<0.02	0	<0.02	<0.02	NC	<0.02	NC
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	0	<0.02	<0.02	NC	<0.01	NC	<0.04	<0.04	NC	<0.01	0	<0.02	<0.02	NC	<0.01	NC
PFOS	µg/L	0.01 : 0.02 (Interlab)	0.04	0.04	0	0.042	5	3.63	2.79	26	**2.6**	**33**	11	8.4	27	**6.4**	**53**	0.54	0.49	10	0.42	25
PFOA	µg/L	0.01	<0.01	<0.01	NC	<0.01	0	0.59	0.72	20	0.56	5	5.87	5.96	2	**3.6**	**48**	0.02	0.02	0	0.019	5
PFHxS	µg/L	0.02 : 0.01 (Interlab)	0.11	0.1	10	0.11	0	1.71	1.77	3	1.6	7	6.31	5.45	15	**4.4**	**36**	0.43	0.37	15	0.4	7

*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: 81 (1-10 x EQL); 50 (10-30 x EQL); 30 (> 30 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 C1 Groundwater Duplicate and Triplicate Analytical Results

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	Sample ID	0207_MW285_210415	0207_QC148_210415		0207_QC248_210415		1435_MW002_210416	1435_QC149_210416		1435_QC249_210416		0207_MW179_210416	0207_QC150_210416		0207_QC250_210416		0207_MW300_210417	0207_QC151_210417		0207_QC251_210417		0207_MW273_210419
	Sample Date	15/04/2021	15/04/2021	RPD	15/04/2021	RPD	16/04/2021	16/04/2021	RPD	16/04/2021	RPD	16/04/2021	16/04/2021	RPD	16/04/2021	RPD	17/04/2021	17/04/2021	RPD	17/04/2021	RPD	19/04/2021
	Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary
Chemical	**Units**	**LOR**																				
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.1	<0.08	NC	<0.01	NC	<0.05
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.1	<0.08	NC	<0.01	NC	<0.05
6:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	0.7	0.77	10	0.74	6	<0.05	<0.05	NC	<0.01	NC	0.16	0.12	29	0.12	29	<0.05
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	0.018	0	<0.05	<0.05	NC	<0.01	NC	<0.1	<0.08	NC	<0.01	NC	<0.05
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.25	<0.21	NC	<0.02	NC	<0.05
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.08	NC	<0.01	NC	<0.02
EtFOSE	µg/L	0.05	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC	<0.25	<0.21	NC	<0.05	NC	<0.05
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.25	<0.21	NC	<0.02	NC	<0.05
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.08	NC	<0.01	NC	<0.02
MeFOSE	µg/L	0.05	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05		<0.05	NC	<0.05	<0.05	NC	<0.05	NC	<0.25	<0.21	NC	<0.05	NC	<0.05
PFBS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	0.31	0.31	0	0.32	3	0.57	0.58	2	0.53	7	9.74	8.93	9	7.3	29	<0.02
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	NC	<0.05	NC	0.4	0.4	0	0.45	12	0.33	0.23	36	0.22	40	3.46	3	14	**2.5**	32	<0.1
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.08	NC	<0.01	NC	<0.02
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.08	NC	<0.01	NC	<0.02
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.08	NC	<0.01	NC	<0.02
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	0.26	0.25	4	0.16	48	4.37	4	9	**2**	74	<0.02
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	0.36	0.35	3	0.29	22	0.25	0.27	8	0.19	27	4.29	4.12	4	**2.6**	49	<0.02
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	1.69	1.72	2	1.4	19	1.34	1.44	7	1.3	3	19.1	18.4	4	**12**	46	<0.02
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.08	NC	0.013	0	<0.02
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.08	NC	<0.01	NC	<0.02
PFPeS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	0.25	0.24	4	0.18	33	0.51	0.52	2	0.42	19	10.3	9.83	5	**6.1**	51	<0.02
PFPeA	µg/L	0.02	<0.02	<0.02	NC	<0.02	NC	3.35	3.36	0	2.6	25	0.3	0.32	6	0.25	18	4.59	4.42	4	**2.9**	45	<0.02
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.25	<0.21	NC	<0.02	NC	<0.05
PFTrDA	µg/L	0.02	<0.02	<0.02	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC	<0.1	<0.08	NC	<0.02	NC	<0.02
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.08	NC	<0.01	NC	<0.02
PFOS	µg/L	0.01 : 0.02 (Interlab)	<0.01	<0.01	NC	<0.02	NC	0.03	0.03	0	<0.02	NC	3.05	3.21	5	2.7	12	59.8	63.3	6	**37**	47	<0.01
PFOA	µg/L	0.01	<0.01	<0.01	NC	<0.01	NC	0.07	0.07	0	0.051	31	0.35	0.4	13	0.28	22	8.36	8.83	5	**5.1**	48	<0.01
PFHxS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	0.56	0.56	0	0.5	11	2.6	2.67	3	2.4	8	47.8	42.4	12	**34**	34	<0.02

Table C1 Groundwater Duplicate and Triplicate Analytical Results

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Sample ID			0207_QC152_210419	RPD	0207_QC252_210419	RPD	0207_MW276_210419	0207_QC153_210419	RPD	0207_QC253_210419	RPD	0207_MW262_210419	0207_QC154_210419	RPD	0207_QC254_210419	RPD
Sample Date			19/04/2021		19/04/2021		19/04/2021	19/04/2021		19/04/2021		19/04/2021	19/04/2021		19/04/2021	
Sample Type			Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Chemical	**Units**	**LOR**														NC
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
6:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	NC	<0.02	NC	<0.05	<0.12	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	<0.02	<0.05	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
EtFOSE	µg/L	0.05	<0.05	NC	<0.05	NC	<0.05	<0.12	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	NC	<0.02	NC	<0.05	<0.12	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	<0.02	<0.05	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
MeFOSE	µg/L	0.05	<0.05	NC	<0.05	NC	<0.05	<0.12	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC
PFBS	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	0.83	1.01	20	0.84	1	0.05	0.05	0	0.049	2
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	NC	<0.05	NC	0.3	0.4	29	0.27	11	<0.1	<0.1	NC	<0.05	NC
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	<0.02	<0.05	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	<0.02	<0.05	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	<0.02	<0.05	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	0.66	0.63	5	**0.4**	49	0.02	<0.02	NC	0.013	42
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	0.26	0.3	14	0.2	26	<0.02	<0.02	NC	0.013	0
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	1.57	1.91	20	1.2	27	0.04	0.04	0	0.038	5
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	<0.02	<0.05	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	<0.02	<0.05	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	0
PFPeS	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	1.17	1.33	13	**0.84**	33	0.04	0.04	0	0.039	3
PFPeA	µg/L	0.02	<0.02	NC	<0.02	NC	0.35	0.41	16	0.29	19	<0.02	<0.02	NC	<0.02	NC
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	NC	<0.02	NC	<0.05	<0.12	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
PFTrDA	µg/L	0.02	<0.02	NC	<0.02	NC	<0.02	<0.05	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	<0.02	<0.05	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFOS	µg/L	0.01 : 0.02 (Interlab)	<0.01	NC	<0.02	NC	11.5	13.5	16	**7.8**	38	0.26	0.28	7	0.2	26
PFOA	µg/L	0.01	<0.01	NC	<0.01	NC	0.57	0.66	15	**0.42**	30	0.03	0.02	40	0.022	31
PFHxS	µg/L	0.02 : 0.01 (Interlab)	<0.02	NC	<0.01	NC	8.05	9.08	12	6.3	24	0.24	0.25	4	0.23	4

Table C2 Surface Water Duplicate and Triplicate Analytical Results

AECOM Imagine it Delivered

		Sample ID	0207_SW043_210412	0207_QC138_210412	RPD	0207_QC238_210412	RPD	0207_SW040_210412	0207_QC140_210412	RPD	0207_QC240_210412	RPD	0207_SW013_210413	0207_QC143_210413	RPD	0207_QC243_210413	RPD
		Sample Date	12/04/2021	12/04/2021		12/04/2021		12/04/2021	12/04/2021		12/04/2021		13/04/2021	13/04/2021		13/04/2021	
		Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Chemical	**Units**	**LOR**															
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
6:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
EtFOSE	µg/L	0.05	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
MeFOSE	µg/L	0.05	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC
PFBS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	0.04	0.04	0	0.049	20
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	NC	<0.05	NC	<0.1	<0.1	NC	<0.05	NC	<0.1	<0.1	NC	<0.05	NC
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	0.011	0
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	0.011	NC	<0.02	<0.02	NC	<0.01	NC
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	0.012	NC	0.07	0.07	0	0.063	11
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFPeS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	0.03	0.03	0	0.029	3
PFPeA	µg/L	0.02	<0.02	<0.02	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC	0.03	0.03	0	0.031	3
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
PFTrDA	µg/L	0.02	<0.02	<0.02	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFOS	µg/L	0.01 : 0.02 (Interlab)	0.01	<0.01	NC	<0.02	NC	<0.01	<0.01	NC	<0.02	NC	0.56	0.55	2	0.53	6
PFOA	µg/L	0.01	<0.01	<0.01	NC	<0.01	NC	<0.01	<0.01	NC	<0.01	NC	0.02	0.02	0	0.016	22
PFHxS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	0.014	NC	<0.02	<0.02	NC	0.017	NC	0.18	0.17	6	0.18	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: 81 (1-10 x EQL); 50 (10-30 x EQL); 30 (> 30 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 C3 Sediment Duplicate and Triplicate Analytical Results

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	Sample ID	0207_SD007_210412	0207_QC139_210412	RPD	0207_QC239_210412	RPD	0207_SD040_210412	0207_QC141_210412	RPD	0207_QC241_210412	RPD	0207_SD102_210413	0207_QC144_210413	RPD	0207_QC244_210413	RPD
	Sample Date	12/04/2021	12/04/2021		12/04/2021		12/04/2021	12/04/2021		12/04/2021		13/04/2021	13/04/2021		13/04/2021	
Chemical	**Units**	**LOR**														
10:2 FTS	mg/kg	0.0005	<0.0005	<0.0005	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC
4:2 FTS	mg/kg	0.0005	<0.0005	<0.0005	NC	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC
6:2 FTS	mg/kg	0.0005	<0.0005	<0.0005	NC	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC
8:2 FTS	mg/kg	0.0005	<0.0005	<0.0005	NC	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC
EtFOSA	mg/kg	0.0005	<0.0005	<0.0005	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC
EtFOSAA	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.002	NC	<0.0002	<0.0002	NC	<0.002	NC	<0.0002	<0.0002	NC	<0.002	NC
EtFOSE	mg/kg	0.0005	<0.0005	<0.0005	NC	<0.005	NC	<0.0005	<0.0005	NC	<0.005	NC	<0.0005	<0.0005	NC	<0.005	NC
MeFOSA	mg/kg	0.0005	<0.0005	<0.0005	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC
MFOSAA	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.002	NC	<0.0002	<0.0002	NC	<0.002	NC	<0.0002	<0.0002	NC	<0.002	NC
MeFOSE	mg/kg	0.0005	<0.0005	<0.0005	NC	<0.005	NC	<0.0005	<0.0005	NC	<0.005	NC	<0.0005	<0.0005	NC	<0.005	NC
PFBS	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC
PFBA	mg/kg	0.001	<0.001	<0.001	NC	<0.002	NC	<0.001	<0.001	NC	<0.002	NC	<0.001	<0.001	NC	<0.002	NC
PFDS	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.001	NC	<0.0014	<0.0002	NC	<0.001	NC	0.0012	0.0014	15	<0.001	NC
PFDA	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC
PFDoDA	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.002	NC	<0.0002	<0.0002	NC	<0.002	NC	<0.0002	<0.0002	NC	<0.002	NC
PFHpS	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC
PFHpA	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC
PFHxA	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC
PFNA	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC
FOSA	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC
PFPeS	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC
PFPeA	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.002	NC	<0.0002	<0.0002	NC	<0.002	NC	<0.0002	<0.0002	NC	<0.002	NC
PFTeDA	mg/kg	0.0005	<0.0005	<0.0005	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC
PFTrDA	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.002	NC	<0.0002	<0.0002	NC	<0.002	NC	<0.0002	<0.0002	NC	<0.002	NC
PFUnDA	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.002	NC	<0.0002	<0.0002	NC	<0.002	NC	<0.0002	<0.0002	NC	<0.002	NC
PFOS	mg/kg	0.0002	0.0004	<0.0002	67	<0.002	NC	0.0004	<0.0002	NC	<0.002	NC	**0.0126**	**0.0022**	**141**	0.013	3
PFOA	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC
PFHxS	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.001	NC	<0.0002	<0.0002	NC	<0.001	NC	0.0009	0.0009	0	0.001	11

*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: 81 (1-10 x EQL); 50 (10-30 x EQL); 30 (> 30 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 C4 Rinsate Analytical Results

	Lab Report Number	EB2110967	EB2110967	EB2110967	EB2110965	EB2110967	EB2110967	EB2110967	EB2110967
	Sample ID	0207_QC322_210412	0207_QC323_210413	0207_QC325_210415	1435_QC326_210416	0207_QC327_210416	0207_QC328_210417	0207_QC329_210419	0207_QC330_210420
	Sample Date	12/04/2021	13/04/2021	15/04/2021	16/04/2021	16/04/2021	17/04/2021	19/04/2021	20/04/2021
	Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate
Chemical Name	**Units**	**LOR**							
10:2 FTS	µg/L	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4:2 FTS	µg/L	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 FTS	µg/L	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FTS	µg/L	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSA	µg/L	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSAA	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
EtFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MeFOSA	µg/L	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MFOSAA	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MeFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PFBS	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFBA	µg/L	0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PFDS	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDA	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDoDA	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpS	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpA	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHxA	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFNA	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
FOSA	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeS	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFTeDA	µg/L	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PFTrDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFUnDA	µg/L	0.01	<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	<0.01
PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01
PFOA	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFHxS	µg/L	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Appendix D

Chain of Custody Forms

Appendix D Chain of Custody Forms

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CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8162 9130 E: adelaide@alsglobal.com

BRISBANE 2 Byth Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

GLADSTONE 46 Callemondah Drive Gladstone QLD 4680 Ph: 07 4979 0944 E: gladstone@alsglobal.com

MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

MELBOURNE 24 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

MUDGEE 1/29 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com

NEWCASTLE 5/585 Maitland Road Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com

PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

WOLLONGONG 1/19-21 Ralph Black Drive, Nth Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: AECOM Fortitude Valley	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☒ Standard TAT (List due date):	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: [redacted]		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT: ~~PFAS OMP~~ **PROJECT NO.:**	**ALS QUOTE NO.:** SY/139/19	**COC SEQUENCE NUMBER (Circle)** COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: 606125632 **PURCHASE ORDER NO.:**	**COUNTRY OF ORIGIN:**		Random Sample Temperature on Receipt: °C
PROJECT MANAGER: [redacted] **CONTACT PH:** [redacted]			Other comment:
SAMPLER: [redacted] **SAMPLER MOBILE:** [redacted]	**RELINQUISHED BY:**	**RECEIVED BY:** JV	**RELINQUISHED BY:**	**RECEIVED BY:**
COC Emailed to ALS? (YES / NO) **EDD FORMAT (or default):**				
Email Reports to (will default to PM if no other addresses are listed): [redacted]	DATE/TIME:	DATE/TIME: 26/3/21 11:00	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):				

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: [redacted]

QLD_0207_PFASOMP

ALS USE ONLY	SAMPLE DETAILS (MATRIX: Solid(S) Water(W))			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price). Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	STANDARD PFAS SUITE (EP231)								Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc. Ensure lab reports are sent to DERP with project QLD_0207_PFASOMP
1	0207_SW065_210323	23/3/21 09:00	W	P	2	✓								
2	0207_SD106_210323	09:00	S		1	✓								
3	0207_SW024_210323	10:50	W		2	✓								
4	0207_SD024_210323	10:50	S		1	✓								
5	0207_SW021_210323	14:25	W		2	✓								
6	0207_SD025_210323	14:25	S		1	✓								
7	0207_SW066_210323	8:15	W		2	✓								
8	0207_SD022_210323	8:15	S		1	✓								
9	0207_SW025_210323	11:10	W		2	✓								
10	0207_SD010_210323	11:10	S		1	✓								
11	0207_SW063_210323	10:00	W		2	✓								
12	0207_SD107_210323	10:00	S		1	✓								
				TOTAL	18									

Environmental Division
Brisbane
Work Order Reference
EB2108522

Telephone : +61-7-3243 7222

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; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT: AECOM	TURNAROUND REQUIREMENTS: ☒ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)
OFFICE: [redacted]	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT: QLD_0207_PFASDMP PROJECT NO.:	ALS QUOTE NO.: SY/139/19	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: [redacted] PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: [redacted] CONTACT PH: [redacted]	COC SEQUENCE NUMBER (Circle) COC: 1 (2) 3 4 5 6 7	Other comment:
SAMPLER: [redacted] SAMPLER MOBILE: [redacted]	OF: 1 (2) 3 4 5 6 7	
COC Emailed to ALS? (YES / (NO) EDD FORMAT (or default):	RELINQUISHED BY: DATE/TIME:	RECEIVED BY: JV 11:00 DATE/TIME: 26/3/21
Email Reports to (will default to PM if no other addresses are listed): james.peachey@aecom.com *	RELINQUISHED BY: DATE/TIME:	RECEIVED BY: DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):		

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: [redacted]

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	STANDARD PFAS SUITE (EP231)								Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
13	0207_SW026_210323	23/3/21 11:50	W	P	2	✓								Ensure lab reports are sent to DERP with project QLD_0207_PFASDMP
14	0207_SD015_210323	11:50	S		1	✓								
15	0207_SW027_210323	11:25	W		2	✓								
16	0207_SD011_210323	11:25	S		1	✓								
17	0207_SW019_210323	10:15	W		2	✓								
18	0207_SD016_210323	10:15	S		1	✓								
				TOTAL	9									

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; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; SG = Sulfuric Preserved Amber Glass; AV – Airfreight Unpreserved Vial

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address: ALS Brisbane

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manage [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_ML51-210413	13/4		✓				✓		1x2P	✓		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division Brisbane
Work Order Reference
EB2110934

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted]	Signed:	Date: 21/4	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed:	Date: 21/4/21	Received by:	Signed:	Date:

1310

30/4

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd
[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Dubbo
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details:)	

6. Report Format: ESdat 7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_MW019-210413	13/04		✓				✓		3x2P	✓		LD + MS
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division Brisbane
Work Order Reference
EB2110935

Telephone : + 61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 21/4

Received by: [redacted] Signed: Date: 21/4/21 1340

Relinquished by: Signed: Date:

Received by: Signed: Date:

30/4

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	Ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_MW147-210413	13/4		✓				✓		1x P	1		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division
Brisbane
Work Order Reference
EB2110938
JH

Telephone : + 61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date: 4/4	Relinquished by:	Signed:	Date:
Received by:	Signed: [redacted]	Date: 21/4/21 1340	Received by:	Signed:	Date:

30/4

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd
[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALW Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_MW056-210413	13/4		✓				✓		1x2P	✓		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division
Brisbane
Work Order Reference JH.
EB2110940

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date: 21/4	Relinquished by:	Signed:	Date:
Received by:	Signed: [redacted]	Date: 21/4/21 1240	Received by:	Signed:	Date:

30/4

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_ML296-210415	15/4		✓				✓		3x250	\		LD+MS
2	0207_ML297-210415	"		✓				✓		1x250	\		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division
Brisbane
Work Order Reference JH.
EB2110942

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by:	[redacted]	Signed:	Date: 21/4	Relinquished by:		Signed:	Date:
Received by:	[redacted]	Signed:	Date: 21/4/21 1340	Received by:		Signed:	Date:

30/4

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_MW038-210415	15/4		✓				✓		1x28	✓		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division
Brisbane
Work Order Reference
EB2110944

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:	[redacted]	Signed:	Date: 21/4	Relinquished by:		Signed:	Date:
Received by:	[redacted]	Signed:	Date: 21/4/21	Received by:		Signed:	Date:

1340

30/4

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_MW13-210415	15/4		✓				✓		1x 2P	✓		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division Brisbane
Work Order Reference JH
EB2110946

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by:		Signed:		Date: 21/4	Relinquished by:	Signed:	Date:
Received by:	[redacted]	Signed:		Date: 21/4/21 1340	Received by:	Signed:	Date:

30/4

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format — Yes (tick)

1. Urgent TAT required? (please circle: 24hr 48hr 5 days)
2. Fast TAT Guarantee Required?
3. Is any sediment layer present in waters to be excluded from extractions?
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?
5. Special storage requirements? (details: _____)
6. Report Format: ESdat
7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_MW295_210415	15/4		✓				✓		3x2P	✓		LD + MS
2	0207_MW294-210415	"		✓				✓		1x2P	✓		
3	0207_SW056_210415	"		✓				✓		1"	✓		
4	0207_SED018_210415	"			✓			✓		1xP	✓		
5	0207_SW032-210415	"		✓				✓		1x2P	✓		
6	0207_SED032-210415	"			✓			✓		1xP	✓		
7	0207_SED017_210415	"			✓			✓		"	✓		
8	0207_MW270-210415	"		✓				✓		1x2P	✓		
9	0207_MW271-210415	"		✓				✓		"	✓		
10	0207_MW268_210415	"		✓				✓		"	✓		
11	0207_MW269_210415	"		✓				✓		"	✓		
12	0207_[redacted]267_210415	"		✓				✓		"	✓		
	0207_												
	0207_												

Environmental Division
Brisbane
Work Order Reference
EB2110947

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted] Signed: Date: 21/4

Received by: Signed: [redacted] Date: 21/4/21 1340

Relinquished by: Signed: Date:

Received by: Signed: Date:

30/4

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_MW021-190419	19/4		✓				✓		1x LP	✓		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division Brisbane
Work Order Reference
EB2110949

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 21/4

Received by: [redacted] Signed: Date: 21/4/21 1340

Relinquished by: Signed: Date:

Received by: Signed: Date:

30/4

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name: ALS Brisbane

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_ ML149-210419	19/4		✓				✓		1x 28	\		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division Brisbane JH

Work Order Reference EB2110952

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by:	[redacted]	Signed:	Date: 21/4	Relinquished by:		Signed:	Date:
Received by:	[redacted]	Signed:	Date: 21/04/21	Received by:		Signed:	Date:

1343

30/4

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_MW293_210419	19/4		✓				✓		3x 2P	✓		LD+MS
2	0207_MW292_210419	11		✓				✓		1x 2P	✓		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division
Brisbane
Work Order Reference JH
EB2110954

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed:	Date: 21/4	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed:	Date: 21/4/21 1340	Received by:	Signed:	Date:

30/4

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name: ALS

Lab. Address: Brisbane

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_ MW032-20419	19/4		✓				✓		1x250			
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division Brisbane

Work Order Reference UH EB2110956

Telephone : + 61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date: 21/4	Relinquished by:	Signed:	Date:
Received by:	Signed:	Date: 21/4/21 1340	Received by:	Signed:	Date:

3 of 4

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address: ALS Brisbane
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_ ML132-210419	19/4		✓				✓		1x 2P	\		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division Brisbane
Work Order Reference
EB2110957

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date: 21/4	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed:	Date: 21/4/21	Received by:	Signed:	Date:

1340

30/4

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_MW003-210413	13/4		✓				✓		1x2P	✓		
2	0207_ML293-210420	20/4		✓				✓		"	✓		
3	0207_SL059-210420	"		✓				✓		"	✓		
4	0207_SED045-210420	"			✓			✓		1xP	✓		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division Brisbane JH
Work Order Reference
EB2110958

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by:	[redacted]	Signed:	Date: 21/4	Relinquished by:	Signed:	Date:
Received by:	[redacted]	Signed:	Date: 21/4/21 1340	Received by:	Signed:	Date:

30/4

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name: 4W Drobane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_ MW28I_20420	20/4		✓				✓		1x2P	✓		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division
Brisbane
Work Order Reference JH
EB2110959

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:	[redacted]	Signed:	[redacted]	Date: 21/4	Relinquished by:	Signed:	Date:
Received by:		Signed:		Date: 21/4/21	Received by:	Signed:	Date:

1340

30/4

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_MW288-210421	21/4		✓				✓		1x4	✓		
2	0207_MW289-210421	"		✓				✓		"	✓		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division Brisbane
Work Order Reference
EB2110961

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by:	[redacted]	Signed:	[redacted]	Date: 21/4	Relinquished by:	Signed:	Date:
Received by:	[redacted]	Signed:		Date: 21/4/21 1340	Received by:	Signed:	Date:

3014

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name: ALS Brisbane

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_MW290-210421	21/4		✓				✓		1x4	✓		
2	0207_MW291-210421	"		✓				✓		"	✓		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division Brisbane

Work Order Reference EB2110962

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date: 21/4

Received by: [redacted] Signed: Date: 21/4/21 1340

Relinquished by: Signed: Date:

Received by: Signed: Date:

30/4

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_~~0207~~1435_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID (1435)	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	~~0207~~_MW002_210416	16/4		✓				✓		1x2P	✓		
2	~~0207~~_~~QA~~1435_QC149_210416	"		✓				✓		"	✓		
3	~~0207~~_1435_QC326_210416	"		✓				✓		"	✓		
4	~~0207~~_1435_MW011_210416	"		✓				✓		3x2P	✓		LD+MS
5	~~0207~~_1435_MW010_210416	"		✓				✓		2x2P	✓		LD
6	~~0207~~_1435_MW004_210416	"		✓				✓		1x2P	✓		
7	~~0207~~_1435_MW006_210416	"		✓				✓		"	✓		
8	~~0207~~_1435_MW009_210416	"		✓				✓		"	✓		
9	~~0207~~_1435_MW003_210416	"		✓				✓		"	✓		
10	~~0207~~_1435_MW007_210416	"		✓				✓		"	✓		
11	~~0207~~_1435_MW008_210416_16/4			✓				✓		"	✓		
12	~~0207~~_1435_MW013_210416_"			✓				✓		"	✓		
	~~0207~~_"	"	"		"	"			"		"	"	
	~~0207~~_"	"	"		"	"			"		"	"	

Environmental Division Brisbane
Work Order Reference EB2110965

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Relinquished by: [redacted]	Signed: [redacted]	Date: 21/4	Relinquished by:	Signed:	Date:
Received by:	Signed:	Date:	Received by: Ben Thorn	21/4/21 1340	Signed:	Date:

AECOM

3014

AECOM Australia Pty Ltd

[redacted]

Chain of Custody

COC Page 1 of 7

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]

Project Name: QLD_0207_PFASOMP

AECOM Project #: 60612563 2.1

Purchase Order No:

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details:)	
6. Report Format: ESdat	

7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_SW043_210412	12/04		✓				✓		3x2p			LDTMS
2	0207_SED007_210412	"			✓			✓		1xp			SBD007
3	0207_MW265_210412	"		✓				✓		1x2p			
4	0207_SW040_210412	"		✓				✓		2x2p			
5	0207_SED040_210412	"			✓			✓		1xp			LD
6	0207_MW255_210413	13/04		✓				✓		1x2p			SBD040
7	0207_MW264_210413	"		✓				✓		"			
8	0207_SW004_210413	"		✓				✓		1x2p			
9	0207_SED038_210413	"		✓				✓		1xp			
10	0207_SW009_210413	"		✓				✓		1x2p			
11	0207_SED013_210413	"			✓			✓		1xp			
12	0207_SW013_210413	"		✓				✓		1x2p			
13	0207_SP102_210413	"			✓			✓		1xp			
14	0207_SW012_210413	"		✓				✓		1x2p			

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Relinquished by: [redacted] Signed: [redacted] Date: 21/4 1340

Received by: Signed: Date:

Temp. received: °C

Report & invoice: [redacted]

Relinquished by: Signed: Date:

Received by: Signed: Date:

Environmental Division Brisbane
Work Order Reference JH
EB2110967

Telephone : +61-7-3243 7222

AECOM — **Chain of Custody** — COC Page 2 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS 3rd bcnk
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
15	0207_JED105-210413	13/4			✓			✓		1xP	✓		
16	0207_JW011-210413	"		✓				✓		1xZP	✓		
17	0207_JED036-210413	"			✓			✓		1xP	✓		
18	0207_JW010-210413	"		✓				✓		1xZP	✓		
19	0207_JED037-210413	"			✓			✓		1xP	✓		
20	0207_MW173-210414	14/04		✓				✓		2xZP	✓		LD
21	0207_QC324-210414	"		✓				✓		1xZP	✓		
22	0207_MW172-210414	"		✓				✓		"	✓		
23	0207_MW254-210414	"		✓				✓		3xZP	✓		LD+MS +MW254
24	0207_MW253-210414	"		✓				✓		1xZP	✓		
25	0207_MW249-210414	"		✓				✓		"	✓		
26	0207_MW261-210414	"		✓				✓		"	✓		
27	0207_MW235-210414	"		✓				✓		"	✓		
28	0207_MW236-210414	"		✓				✓		"	✓		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date: 21/4

Received by: [redacted] Signed: Date: 21/4/21 1340

Relinquished by: Signed: Date:

Received by: Signed: Date:

AECOM — **Chain of Custody** — COC Page 3 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
29	0207_MW252-210414	14/4		✓			•	✓		1×2P	✓		
30	0207_MW232-210414	"		✓				✓		"	✓		
31	0207_MW230_210414	"		✓				✓		"	✓		
32	0207_MW223_210414	"		✓				✓		2×2P	✓		LD
33	0207_MW222-210414	"		✓				✓		1×2P	✓		
34	0207_MW198_210414	"		✓				✓		"	✓		
35	0207_MW206-210614	"		✓				✓		"	✓		
36	0207_MW221-210414	"		✓				✓		"	✓		
37	0207_MW193-210614	"		✓				✓		"	✓		
38	0207_MW174-210414	"		✓				✓		"	✓		
39	0207_MW282-210415	15/4		✓				✓		"	✓		MW282
40	0207_MW201-210415	"		✓				✓		"	✓		
41	0207_MW203-210415	"		✓				✓		"	✓		
42	0207_SW028-210415	"		✓				✓		"	✓		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date: 21/4	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed:	Date: 21/4/21	Received by:	Signed:	Date:

1340

AECOM

Chain of Custody

COC Page 4 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address: ALS Brisbane
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
43	0207_SED070_210415	15/4			✓			✓		1xP	✓		
44	0207_MW205_210415	"		✓				✓		1x2P	✓		
45	0207_MW179_210416	16/4		✓				✓		"	✓		
46	0207_MW278_210416	"		✓				✓		"	✓		
47	0207_MW279_210416	"		✓				✓		3x2P	✓		LD+MS
48	0207_MW300_210417	17/4		✓				✓		1x2P	✓		
49	0207_MW299_210417	"		✓				✓		"	✓		
50	0207_MW167_210417	"		✓				✓		"	✓		
51	0207_MW204_210417	"		✓				✓		"	✓		
52	0207_MW205_210417	"		✓				✓		"	✓		
53	0207_MW202_210417	"		✓				✓		"	✓		
54	0207_MW189_210417	"		✓				✓		"	✓		
55	0207_MW187_210417	"		✓				✓		"	✓		
56	0207_MW178_210417	"		✓				✓		"	✓		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date: 21/4	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed:	Date: 21/4/21 1340	Received by:	Signed:	Date:

AECOM — **Chain of Custody** — COC Page 5 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
57	0207_MW233-210417	17/4		✓				✓		1x2P	✓		
58	0207_MW257-210417	"		✓				✓		"	✓		
59	0207_MW274-210417	"		✓				✓		"	✓		
60	0207_MW275-210417	"		✓				✓		"	✓		
61	0207_MW280-210417	"		✓				✓		"	✓		
62	0207_MW273-210419	19/4		✓				✓		2x2P	✓		CU
63	0207_MW272-210419	"		✓				✓		3x2P	✓		CU+MS
64	0207_MW276-210419	"		✓				✓		1x2P	✓		
65	0207_MW262-210419	"		✓				✓		"	✓		
66	0207_MW245-210420	20/4		✓				✓		"	✓		
67	0207_MW242-210420	"		✓				✓		"	✓		
68	0207_MW266-210420	"		✓				✓		"	✓		
	0207_												
	0207_												

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date: 21/4	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed:	Date: 21/4/21 1340	Received by:	Signed:	Date:

AECOM — **Chain of Custody** — COC Page 6 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
69	0207_QC122-210412	12/4		✓				✓		1x 2P	✓		
70	0207_QC138-210412	"		✓				✓		1x 2P	✓		
71	0207_QC139-210412	"			✓			✓		1x P	✓		
72	0207_QC140-210412	"		✓				✓		1x 2P	✓		
73	0207_QC141-210412	"			✓			✓		1x P	✓		
74	0207_QC142-210413	13/04		✓				✓		1x 2P	✓		
75	0207_QC323-210413	"		(✓)				✓		"	✓		
76	0207_QC143-210413	"		✓	✓			✓		1x 2P	✓		
77	0207_QC144-210413	"			✓			✓		1x P	✓		
78	0207_QC145-210414	14/04		✓				✓		1x 2P	✓		
79	0207_QC146-210414	"		✓				✓		"	✓		
80	0207_QC325-210414	15/04		✓				✓		1x 2P	✓		
81	0207_QC147-210415	"		✓				✓		"	✓		
82	0207_QC148-210415	"		✓				✓		"	✓		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date: 21/4
Received by: [redacted]	Signed:	Date: 21/4/21 13:40

Relinquished by:	Signed:	Date:
Received by:	Signed:	Date:

10/5

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name: ALS Brisbane
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
	0207_MW022_210428	28/4		✓				✓		1x 2P	✓		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division
Brisbane
Work Order Reference
EB2111757

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date: 28/4		Relinquished by:	Signed:	Date:
Received by:	Signed:	Date: 28/4/21 1009		Received by:	Signed:	Date:

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manage [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0207_MW157_210428	28/4		✓				✓		3x2P	\		LD+MS
2	0207_MW122_210428	"		✓				✓		1x2P	\		
3	0207_MW118_210428	"		✓				✓		1x2P	\		
4	0207_MW114_210428	"		✓				✓		1x2P	\		
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												

Environmental Division
Brisbane
Work Order Reference
EB2111764

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 29/4

Received by: [redacted] Signed: Date: 29/4/21 1008

Relinquished by: Signed: Date:

Received by: Signed: Date:

Sent Please Forward to NMI with the COC 4/5

AECOM — **Chain of Custody** — AECOPG/210423/2 — COC Page 1 of 2

AECOM Australia Pty Ltd [redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name: Re
Lab. Address:
Contact Name: NMI
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manag [redacted]

RECEIVED 23 APR 2021 BY: AO 15:00 C

Lab ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
N21/010444	0207_QC238-210412	12/4		✓			•	✓		1x2P	✓		For Lod to NMI
N21/010445	0207_QC239-210412	"			✓			✓		1xP	✓		"
N21/010446	0207_QC240-210412	"		–				✓		1x2P	✓		"
N21/010447	0207_QC241-210412	"			✓			✓		1xP	✓		"
N21/010448	0207_QC242-210413	13/4		✓				✓		4	✓		"
N21/010449	0207_QC243-210413	"		✓				✓		1x2P	✓		"
N21/010450	0207_QC244-210413	"			✓			✓		1xP	✓		"
N21/010451	0207_QC245-210414	14/4		✓				✓		1x2P	✓		"
N21/010452	0207_QC246-210414	"		✓				✓		"	✓		"
N21/010453	0207_QC247-210415	15/4		✓				✓		"	✓		"
N21/010454	0207_QC248-210415	"		✓				✓		"	✓		"
N21/010455	0207_QC250-210416	16/4		✓				✓		"	✓		"
N21/010456	0207_QC251-210417	17/4		✓				✓		"	✓		"
N21/010457	0207_QC252-210417	17/4		✓				✓		"	✓		"

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME [redacted]

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: Date: 21/4

Received by: Signed: Date:

Relinquished by: Signed: Date:

Received by: Signed: Date:

Please forward to NMI LAB for COC

Chain of Custody

COC Page 2 of 2

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: NMI
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted] | Project Name: QLD_0207_PFASOMP | AECOM Project #: 60612563 2.1 | Purchase Order No:

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
N21/010458	0207_ QC253_210419	19/4		✓				✓		1×4			Forward to NMI
N21/010459	0207_ QC254-210419	"		✓				✓		"			
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
	0207_												
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	0207_												

Notes: Do ✱Analyse

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Date: 4/4

Received by: Date:

Relinquished by: Signed: Date: 20/4

Received by: Signed: Date:

LAB 10000 1717

SENT => Please Forward to NMI Ltd THD COC

AECOM — Chain of Custody — COC Page 1 of 1

AECOM Australia Pty Ltd
[redacted]
Email reports to: [redacted]

Laboratory Details
Lab. Name: AECOM/210423
Lab. Address: NM Due: 30/04/21
Contact Name:
Lab. Ref:
Tel: An
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP **AECOM Project #:** 60612563 2.1 **Purchase Order No:**

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manage [redacted]

Analysis Request: EP231X (PFAS Std 28) | HOLD | Notes

Lab ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)
N21/010437	~~0207~~_4J5_QC249-210416	16/4		✓				✓		1x2P
	~~0207~~_									
	~~0207~~_									
	~~0207~~_									
	~~0207~~_									
	~~0207~~_									
	~~0207~~_									
	~~0207~~_									
	~~0207~~_									
	~~0207~~_									
	~~0207~~_									
	~~0207~~_									
	~~0207~~_									
	~~0207~~_									
	~~0207~~_									

Notes: Forward to NMI

RECEIVED 23 APR 2021 BY: AO 15:00

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date: 21/4

Received by: Signed: Date:

Relinquished by: Signed: Date:

Received by: 22/4 Signed: Date:

Appendix E

Laboratory Analytical Certificates and QA/QC Reports

Appendix E Laboratory Analytical Certificates and QA/QC Reports

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2108522**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563.2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 26-Mar-2021 11:00	Issue Date	: 30-Mar-2021
Client Requested Due Date	: 08-Apr-2021	Scheduled Reporting Date	: **08-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 9.9°C - Ice present
Receipt Detail	: MEDIUM	No. of samples received / analysed	: 18 / 18

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
- ***SRN Reissued 30/03/2021: As per the email from [redacted] 30/03/2021, the sampling times on the SRN have been corrected, the project has been changed to QLD_0207_PFASOMP, and the sample ID for ALS #6 changed to 0207_SD025_210323.***
- 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.

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)
EB2108522-002	23-Mar-2021 09:00	0207_SD106_210323	✓	✓
EB2108522-004	23-Mar-2021 10:50	0207_SD024_210323	✓	✓
EB2108522-006	23-Mar-2021 14:25	0207_SD025_210323	✓	✓
EB2108522-008	23-Mar-2021 08:15	0207_SD022_210323	✓	✓
EB2108522-010	23-Mar-2021 11:10	0207_SD010_210323	✓	✓
EB2108522-012	23-Mar-2021 10:00	0207_SD107_210323	✓	✓
EB2108522-014	23-Mar-2021 11:50	0207_SD015_210323	✓	✓
EB2108522-016	23-Mar-2021 11:25	0207_SD011_210323	✓	✓
EB2108522-018	23-Mar-2021 10:15	0207_SD016_210323	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2108522-001	23-Mar-2021 09:00	0207_SW065_210323	✓
EB2108522-003	23-Mar-2021 10:50	0207_SW024_210323	✓
EB2108522-005	23-Mar-2021 14:25	0207_SW021_210323	✓
EB2108522-007	23-Mar-2021 08:15	0207_SW066_210323	✓
EB2108522-009	23-Mar-2021 11:10	0207_SW025_210323	✓
EB2108522-011	23-Mar-2021 10:00	0207_SW063_210323	✓
EB2108522-013	23-Mar-2021 11:50	0207_SW026_210323	✓
EB2108522-015	23-Mar-2021 11:25	0207_SW027_210323	✓
EB2108522-017	23-Mar-2021 10:15	0207_SW019_210323	✓

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

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2108522**	Page	: 1 of 11
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: +[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 26-Mar-2021 11:00
Order number	: 60612563.2.1	Date Analysis Commenced	: 30-Mar-2021
C-O-C number	: ----	Issue Date	: 08-Apr-2021 12:05
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 18		
No. of samples analysed	: 18		

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]	[redacted]	Brisbane Inorganics, Stafford, QLD
[redacted]	[redacted]	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 Contact 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.
- EP231X PFAS: Sample "0207_SD024_210323" shows high matrix spike recovery due to sample heterogeneity. Confirmed by re-extraction and re-analysis.
- 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	0207_SD106_210323	0207_SD024_210323	0207_SD025_210323	0207_SD022_210323	0207_SD010_210323
			Sampling date / time	23-Mar-2021 09:00	23-Mar-2021 10:50	23-Mar-2021 14:25	23-Mar-2021 08:15	23-Mar-2021 11:10
Compound	CAS Number	LOR	Unit	EB2108522-002	EB2108522-004	EB2108522-006	EB2108522-008	EB2108522-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**42.0**	**33.4**	**34.3**	**52.2**	**42.1**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	**0.0004**	**0.0008**	<0.0002	<0.0002	**0.0008**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	**0.0004**	**0.0009**	<0.0002	<0.0002	**0.0008**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0046**	**0.0091**	**0.0005**	**0.0011**	**0.0095**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	**0.0005**	**0.0010**	<0.0002	<0.0002	**0.0010**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.152**	**0.0624**	**0.0106**	**0.0172**	**0.0997**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0034**	<0.0002	**0.0009**	**0.0009**	<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	**0.0009**	**0.0012**	**0.0005**	**0.0003**	**0.0011**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0017**	**0.0026**	**0.0004**	**0.0004**	**0.0030**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	**0.0003**	<0.0002	**0.0004**	<0.0002	**0.0002**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0010**	**0.0004**	**0.0008**	**0.0003**	**0.0004**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	**0.0004**	<0.0002	**0.0017**	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	**0.0006**	<0.0002	**0.0031**	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	**0.0003**	<0.0002	**0.0016**	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	**0.0023**	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	**0.0013**	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	**0.0009**	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	**0.0003**	<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	0207_SD106_210323	0207_SD024_210323	0207_SD025_210323	0207_SD022_210323	0207_SD010_210323
				Sampling date / time	23-Mar-2021 09:00	23-Mar-2021 10:50	23-Mar-2021 14:25	23-Mar-2021 08:15	23-Mar-2021 11:10
Compound	CAS Number	LOR	Unit		EB2108522-002	EB2108522-004	EB2108522-006	EB2108522-008	EB2108522-010
					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		**0.167**	**0.0784**	**0.0250**	**0.0202**	**0.116**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.157**	**0.0715**	**0.0111**	**0.0183**	**0.109**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.161**	**0.0765**	**0.0132**	**0.0193**	**0.115**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**119**	**107**	**90.0**	**134**	**114**
13C8-PFOA	----	0.0002	%		**112**	**100**	**117**	**122**	**117**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0207_SD107_210323	0207_SD015_210323	0207_SD011_210323	0207_SD016_210323	----
			Sampling date / time	23-Mar-2021 10:00	23-Mar-2021 11:50	23-Mar-2021 11:25	23-Mar-2021 10:15	----
Compound	CAS Number	LOR	Unit	EB2108522-012	EB2108522-014	EB2108522-016	EB2108522-018	--------
				Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**52.2**	**30.1**	**31.1**	**55.0**	**----**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0004**	**----**
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	**0.0023**	**0.0006**	**0.0023**	**0.0035**	**----**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	**0.0004**	**0.0002**	**----**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0170**	**0.0209**	**0.0371**	**0.0181**	**----**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0007**	**0.0016**	**0.0006**	**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	**0.0014**	**0.0004**	**0.0002**	**0.0016**	**----**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0014**	**0.0007**	**0.0005**	**0.0019**	**----**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	**0.0012**	**0.0003**	<0.0002	**0.0009**	**----**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0017**	**0.0005**	**0.0005**	**0.0011**	**----**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	**0.0014**	**0.0002**	<0.0002	**0.0011**	**----**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	**0.0014**	<0.0002	<0.0002	**0.0007**	**----**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	**0.0013**	<0.0002	<0.0002	**0.0007**	**----**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	**0.0020**	<0.0002	<0.0002	**0.0009**	**----**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	**0.0007**	<0.0002	<0.0002	**0.0003**	**----**
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	**----**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0207_SD107_210323	0207_SD015_210323	0207_SD011_210323	0207_SD016_210323	----
				Sampling date / time	23-Mar-2021 10:00	23-Mar-2021 11:50	23-Mar-2021 11:25	23-Mar-2021 10:15	----
Compound	CAS Number	LOR	Unit		EB2108522-012	EB2108522-014	EB2108522-016	EB2108522-018	--------
					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	----
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		**0.0335**	**0.0252**	**0.0416**	**0.0331**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0193**	**0.0215**	**0.0394**	**0.0216**	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0260**	**0.0234**	**0.0406**	**0.0285**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**109**	**97.0**	**126**	**106**	----
13C8-PFOA	----	0.0002	%		**118**	**106**	**129**	**105**	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_SW065_210323	0207_SW024_210323	0207_SW021_210323	0207_SW066_210323	0207_SW025_210323
				Sampling date / time	23-Mar-2021 09:00	23-Mar-2021 10:50	23-Mar-2021 14:25	23-Mar-2021 08:15	23-Mar-2021 11:10
					EB2108522-001	EB2108522-003	EB2108522-005	EB2108522-007	EB2108522-009
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.10**	**0.37**	**0.04**	**0.07**	**0.04**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.04**	**0.32**	**0.03**	**0.06**	**0.04**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.22**	**2.12**	**0.17**	**0.32**	**0.24**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.08**	<0.02	**0.02**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.31**	**1.06**	**0.58**	**0.96**	**0.36**
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	**0.3**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.35**	**0.09**	**0.04**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.08**	**0.68**	**0.10**	**0.13**	**0.08**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.03**	**0.03**	**0.02**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.01**	**0.03**	**0.03**	**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	0207_SW065_210323	0207_SW024_210323	0207_SW021_210323	0207_SW066_210323	0207_SW025_210323
				Sampling date / time	23-Mar-2021 09:00	23-Mar-2021 10:50	23-Mar-2021 14:25	23-Mar-2021 08:15	23-Mar-2021 11:10
Compound	CAS Number	LOR	Unit		EB2108522-001	EB2108522-003	EB2108522-005	EB2108522-007	EB2108522-009
					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	**0.08**	<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		**0.76**	**5.34**	**1.17**	**1.66**	**0.76**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.53**	**3.18**	**0.75**	**1.28**	**0.60**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.72**	**4.94**	**1.12**	**1.58**	**0.72**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**110**	**101**	**105**	**108**	**108**
13C8-PFOA	----	0.02	%		**103**	**101**	**105**	**102**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_SW063_210323	0207_SW026_210323	0207_SW027_210323	0207_SW019_210323	----
				Sampling date / time	23-Mar-2021 10:00	23-Mar-2021 11:50	23-Mar-2021 11:25	23-Mar-2021 10:15	----
Compound	CAS Number	LOR	Unit		EB2108522-011	EB2108522-013	EB2108522-015	EB2108522-017	--------
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.08**	<0.02	**0.02**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.05**	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.08**	**0.31**	**0.08**	**0.11**	----
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		**0.29**	**0.76**	**0.40**	**0.30**	----
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		**0.04**	**0.05**	<0.02	**0.06**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.08**	**0.13**	**0.03**	**0.10**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.03**	<0.02	<0.02	**0.04**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.04**	**0.03**	<0.01	**0.06**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.04**	<0.02	<0.02	**0.05**	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		**0.04**	<0.02	<0.02	**0.04**	----
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	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_SW063_210323	0207_SW026_210323	0207_SW027_210323	0207_SW019_210323	----
				Sampling date / time	23-Mar-2021 10:00	23-Mar-2021 11:50	23-Mar-2021 11:25	23-Mar-2021 10:15	----
Compound	CAS Number	LOR	Unit		EB2108522-011	EB2108522-013	EB2108522-015	EB2108522-017	--------
					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	----
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	**0.07**	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		**0.13**	<0.05	<0.05	**0.13**	----
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		**0.81**	**1.43**	**0.51**	**0.98**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.37**	**1.07**	**0.48**	**0.41**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.69**	**1.36**	**0.51**	**0.89**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**103**	**100**	**108**	----
13C8-PFOA	----	0.02	%		**103**	**104**	**102**	**110**	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2108522**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 26-Mar-2021
Order number	: 60612563.2.1	Date Analysis Commenced	: 30-Mar-2021
C-O-C number	: ----	Issue Date	: 08-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 18		
No. of samples analysed	: 18		

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]	[redacted]	Brisbane Inorganics, Stafford, QLD
[redacted]	[redacted]	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

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: 3594583)									
EB2108522-002	0207_SD106_210323	EA055: Moisture Content	----	0.1	%	42.0	43.3	3.09	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3594582)									
EB2108522-002	0207_SD106_210323	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0004	0.0003	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0004	0.0003	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0046	0.0046	0.00	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0005	0.0006	19.4	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.152	0.186	19.9	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0034	0.0033	0.00	0% - 50%
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3594582)									
EB2108522-002	0207_SD106_210323	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0009	0.0007	30.4	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0017	0.0014	15.3	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0003	0.0003	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0010	0.0010	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0004	0.0005	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0006	0.0004	24.6	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0003	0.0003	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3594582)									
EB2108522-002	0207_SD106_210323	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0003	0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	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: 3594582) - continued									
EB2108522-002	0207_SD106_210323	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3594582)									
EB2108522-002	0207_SD106_210323	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	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: 3594582)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	100	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	100	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	97.0	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	96.6	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: 3594582)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	110	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	96.4	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.8	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	100	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	106	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.0	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	94.7	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3594582)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	102	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	103	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	111	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	100	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.6	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3594582)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	101	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	113	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	106	65.0	137

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: 3594582) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	96.7	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: 3598435)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	99.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	101	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	88.5	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	110	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	97.3	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3598435)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	99.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	94.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	94.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	94.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.8	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	98.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	93.4	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	94.0	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	89.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	93.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3598435)								
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	70.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	66.2	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	90.3	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	106	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3598435)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	93.9	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	115	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: 3598435) - continued								
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	111	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	95.2	64.2	133
EP231P: PFAS Sums (QCLot: 3598435)								
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: 3594582)							
EB2108522-004	0207_SD024_210323	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	# 137	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	# 129	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	# 170	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	109	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3594582)							
EB2108522-004	0207_SD024_210323	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	97.5	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	# 136	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	# 167	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	116	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	103	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	116	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	108	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	118	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	107	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3594582)							
EB2108522-004	0207_SD024_210323	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	119	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: 3594582) - continued							
EB2108522-004	0207_SD024_210323	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# 133	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	105	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	105	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	110	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	110	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	105	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3594582)							
EB2108522-004	0207_SD024_210323	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	124	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	109	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	115	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	92.5	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2108522**	Page	: 1 of 6
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 26-Mar-2021
Site	: ----	Issue Date	: 08-Apr-2021
Sampler	: [redacted]	No. of samples received	: 18
Order number	: 60612563.2.1	No. of samples analysed	: 18

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	EB2108522--004	0207_SD024_210323	**Perfluorobutane sulfonic acid (PFBS)**	375-73-5	137 %	72.0-128%	**Recovery greater than upper data quality objective**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2108522--004	0207_SD024_210323	**Perfluoropentane sulfonic acid (PFPeS)**	2706-91-4	129 %	73.0-123%	**Recovery greater than upper data quality objective**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2108522--004	0207_SD024_210323	**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	EB2108522--004	0207_SD024_210323	**Perfluoroheptane sulfonic acid (PFHpS)**	375-92-8	170 %	70.0-132%	**Recovery greater than upper data quality objective**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2108522--004	0207_SD024_210323	**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	EB2108522--004	0207_SD024_210323	**Perfluoropentanoic acid (PFPeA)**	2706-90-3	136 %	69.0-132%	**Recovery greater than upper data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2108522--004	0207_SD024_210323	**Perfluorohexanoic acid (PFHxA)**	307-24-4	167 %	70.0-132%	**Recovery greater than upper data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2108522--004	0207_SD024_210323	**N-Methyl perfluorooctane sulfonamide (MeFOSA)**	31506-32-8	133 %	70.0-130%	**Recovery greater than upper data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	11	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)							
0207_SD106_210323, 0207_SD024_210323, 0207_SD025_210323, 0207_SD022_210323, 0207_SD010_210323, 0207_SD107_210323, 0207_SD015_210323, 0207_SD011_210323, 0207_SD016_210323	**23-Mar-2021**	**----**	----	----	**30-Mar-2021**	06-Apr-2021	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0207_SD106_210323, 0207_SD024_210323, 0207_SD025_210323, 0207_SD022_210323, 0207_SD010_210323, 0207_SD107_210323, 0207_SD015_210323, 0207_SD011_210323, 0207_SD016_210323	**23-Mar-2021**	**31-Mar-2021**	19-Sep-2021	✓	**01-Apr-2021**	10-May-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
0207_SD106_210323, 0207_SD024_210323, 0207_SD025_210323, 0207_SD022_210323, 0207_SD010_210323, 0207_SD107_210323, 0207_SD015_210323, 0207_SD011_210323, 0207_SD016_210323	**23-Mar-2021**	**31-Mar-2021**	19-Sep-2021	✓	**01-Apr-2021**	10-May-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
0207_SD106_210323, 0207_SD024_210323, 0207_SD025_210323, 0207_SD022_210323, 0207_SD010_210323, 0207_SD107_210323, 0207_SD015_210323, 0207_SD011_210323, 0207_SD016_210323	**23-Mar-2021**	**31-Mar-2021**	19-Sep-2021	✓	**01-Apr-2021**	10-May-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0207_SD106_210323, 0207_SD024_210323, 0207_SD025_210323, 0207_SD022_210323, 0207_SD010_210323, 0207_SD107_210323, 0207_SD015_210323, 0207_SD011_210323, 0207_SD016_210323	**23-Mar-2021**	**31-Mar-2021**	19-Sep-2021	✓	**01-Apr-2021**	10-May-2021	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
0207_SD106_210323, 0207_SD024_210323, 0207_SD025_210323, 0207_SD022_210323, 0207_SD010_210323, 0207_SD107_210323, 0207_SD015_210323, 0207_SD011_210323, 0207_SD016_210323	**23-Mar-2021**	**31-Mar-2021**	19-Sep-2021	✓	**01-Apr-2021**	10-May-2021	✓

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)							
0207_SW065_210323, 0207_SW024_210323, 0207_SW021_210323, 0207_SW066_210323, 0207_SW025_210323, 0207_SW063_210323, 0207_SW026_210323, 0207_SW027_210323, 0207_SW019_210323	**23-Mar-2021**	**01-Apr-2021**	19-Sep-2021	✓	**01-Apr-2021**	19-Sep-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_SW065_210323, 0207_SW024_210323, 0207_SW021_210323, 0207_SW066_210323, 0207_SW025_210323, 0207_SW063_210323, 0207_SW026_210323, 0207_SW027_210323, 0207_SW019_210323	**23-Mar-2021**	**01-Apr-2021**	19-Sep-2021	✓	**01-Apr-2021**	19-Sep-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_SW065_210323, 0207_SW024_210323, 0207_SW021_210323, 0207_SW066_210323, 0207_SW025_210323, 0207_SW063_210323, 0207_SW026_210323, 0207_SW027_210323, 0207_SW019_210323	**23-Mar-2021**	**01-Apr-2021**	19-Sep-2021	✓	**01-Apr-2021**	19-Sep-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_SW065_210323, 0207_SW024_210323, 0207_SW021_210323, 0207_SW066_210323, 0207_SW025_210323, 0207_SW063_210323, 0207_SW026_210323, 0207_SW027_210323, 0207_SW019_210323	**23-Mar-2021**	**01-Apr-2021**	19-Sep-2021	✓	**01-Apr-2021**	19-Sep-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_SW065_210323, 0207_SW024_210323, 0207_SW021_210323, 0207_SW066_210323, 0207_SW025_210323, 0207_SW063_210323, 0207_SW026_210323, 0207_SW027_210323, 0207_SW019_210323	**23-Mar-2021**	**01-Apr-2021**	19-Sep-2021	✓	**01-Apr-2021**	19-Sep-2021	✓

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	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	9	**11.11**	**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	11	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	11	**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 : **EB2110934**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2110934-001	13-Apr-2021 00:00	0207_MW151_210413	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110934**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021 14:32
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW151_210413	----	----	----	----
				Sampling date / time	13-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110934-001	--------	--------	--------	--------
					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	0.02	µg/L		<0.02	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW151_210413	----	----	----	----
				Sampling date / time	13-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110934-001	--------	--------	--------	--------
					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		<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	%		**103**	----	----	----	----
13C8-PFOA	----	0.02	%		**98.5**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110934**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	4.03	3.87	4.04	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.62	0.64	3.55	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.80	0.81	1.42	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	4.14	4.01	3.35	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.29	0.29	0.00	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.62	0.63	0.00	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.22	0.21	0.00	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.23	0.22	5.04	0% - 50%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	1.33	1.29	3.18	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.42	0.41	0.00	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.36	0.37	3.28	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.58	1.59	0.777	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.25	0.30	18.4	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.3	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.06	0.05	0.00	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: 3637760) - continued									
EB2110942-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.07	0.07	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.32	0.32	0.00	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	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: 3637760) - continued									
EB2110910-004	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	12.8	12.6	1.58	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	8.17	7.88	3.61	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	11.7	11.5	1.81	0% - 20%
EB2110942-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	2.95	2.89	2.05	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.95	1.92	1.55	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.66	2.61	1.90	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: **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: 3637760)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	97.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	113	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	103	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	98.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	92.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	99.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	87.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	101	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	84.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	72.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	97.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	71.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	123	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	67.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	85.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	80.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	89.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	86.8	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	79.5	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	92.3	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: 3637760) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	67.6	64.2	133
EP231P: PFAS Sums (QCLot: 3637760)								
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	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	91.0	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	83.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	76.3	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	91.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	82.1	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	73.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	76.9	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	88.6	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	80.1	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	80.0	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	77.2	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	74.6	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	73.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	76.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	68.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	93.5	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	59.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	101	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	81.6	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760) - continued							
EB2110935-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	74.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	83.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	92.6	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	70.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	90.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	71.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	73.3	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	73.5	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110934**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW151_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW151_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW151_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW151_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW151_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓

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	1	18	**5.56**	**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 : **EB2110935**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2110935-001	13-Apr-2021 00:00	0207_MW019_210413	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110935**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	[redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021 14:32
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW019_210413	----	----	----	----
				Sampling date / time	13-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110935-001	--------	--------	--------	--------
					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	0.02	µg/L		**0.03**	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW019_210413	----	----	----	----
				Sampling date / time	13-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110935-001	--------	--------	--------	--------
					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		**0.03**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.03**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.03**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**110**	----	----	----	----
13C8-PFOA	----	0.02	%		**101**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110935**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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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]	[redacted]	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

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: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	4.03	3.87	4.04	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.62	0.64	3.55	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.80	0.81	1.42	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	4.14	4.01	3.35	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.29	0.29	0.00	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.62	0.63	0.00	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.22	0.21	0.00	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.23	0.22	5.04	0% - 50%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	1.33	1.29	3.18	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.42	0.41	0.00	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.36	0.37	3.28	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.58	1.59	0.777	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.25	0.30	18.4	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.3	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.06	0.05	0.00	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: 3637760) - continued									
EB2110942-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.07	0.07	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.32	0.32	0.00	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	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: 3637760) - continued									
EB2110910-004	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	12.8	12.6	1.58	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	8.17	7.88	3.61	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	11.7	11.5	1.81	0% - 20%
EB2110942-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	2.95	2.89	2.05	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.95	1.92	1.55	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.66	2.61	1.90	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: **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: 3637760)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	97.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	113	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	103	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	98.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	92.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	99.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	87.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	101	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	84.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	72.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	97.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	71.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	123	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	67.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	85.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	80.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	89.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	86.8	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	79.5	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	92.3	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: 3637760) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	67.6	64.2	133
EP231P: PFAS Sums (QCLot: 3637760)								
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	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3637760)							
EB2110935-001	0207_MW019_210413	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	91.0	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	83.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	76.3	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	91.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	82.1	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	73.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)							
EB2110935-001	0207_MW019_210413	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	76.9	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	88.6	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	80.1	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	80.0	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	77.2	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	74.6	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	73.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	76.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	68.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	93.5	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)							
EB2110935-001	0207_MW019_210413	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	59.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	101	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	81.6	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760) - continued							
EB2110935-001	0207_MW019_210413	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	74.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	83.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	92.6	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	70.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)							
EB2110935-001	0207_MW019_210413	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	90.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	71.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	73.3	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	73.5	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110935**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW019_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW019_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW019_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW019_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW019_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓

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	1	18	**5.56**	**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	: **EB2110938**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	[redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2110938-001	13-Apr-2021 00:00	0207_MW147_210413	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110938**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021 14:32
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW147_210413	----	----	----	----
				Sampling date / time	13-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110938-001	--------	--------	--------	--------
					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	0.02	µg/L		<0.02	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW147_210413	----	----	----	----
				Sampling date / time	13-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110938-001	--------	--------	--------	--------
					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		<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	%		**107**	----	----	----	----
13C8-PFOA	----	0.02	%		**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

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110938**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	4.03	3.87	4.04	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.62	0.64	3.55	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.80	0.81	1.42	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	4.14	4.01	3.35	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.29	0.29	0.00	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.62	0.63	0.00	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.22	0.21	0.00	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.23	0.22	5.04	0% - 50%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	1.33	1.29	3.18	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.42	0.41	0.00	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.36	0.37	3.28	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.58	1.59	0.777	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.25	0.30	18.4	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.3	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.06	0.05	0.00	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: 3637760) - continued									
EB2110942-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.07	0.07	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.32	0.32	0.00	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	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: 3637760) - continued									
EB2110910-004	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	12.8	12.6	1.58	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	8.17	7.88	3.61	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	11.7	11.5	1.81	0% - 20%
EB2110942-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	2.95	2.89	2.05	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.95	1.92	1.55	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.66	2.61	1.90	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: **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: 3637760)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	97.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	113	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	103	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	98.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	92.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	99.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	87.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	101	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	84.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	72.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	97.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	71.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	123	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	67.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	85.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	80.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	89.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	86.8	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	79.5	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	92.3	67.0	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	67.6	64.2	133
EP231P: PFAS Sums (QCLot: 3637760)								
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: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	91.0	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	83.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	76.3	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	91.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	82.1	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	73.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	76.9	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	88.6	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	80.1	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	80.0	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	77.2	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	74.6	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	73.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	76.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	68.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	93.5	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	59.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	101	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	81.6	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760) - continued							
EB2110935-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	74.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	83.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	92.6	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	70.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	90.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	71.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	73.3	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	73.5	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110938**	Page	: 1 of 4
Client	: [redacted]	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW147_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW147_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW147_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW147_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW147_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓

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	1	18	**5.56**	**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 : **EB2110940**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2110940-001	13-Apr-2021 00:00	0207_MW056_210413	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110940**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	[redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021 14:30
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW056_210413	----	----	----	----
				Sampling date / time	13-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110940-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.05**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.04**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.33**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.12**	----	----	----	----
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		**0.03**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.07**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.02**	----	----	----	----
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	0207_MW056_210413	----	----	----	----
				Sampling date / time	13-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110940-001	--------	--------	--------	--------
					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		**0.66**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.45**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.62**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**112**	----	----	----	----
13C8-PFOA	----	0.02	%		**101**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110940**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	4.03	3.87	4.04	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.62	0.64	3.55	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.80	0.81	1.42	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	4.14	4.01	3.35	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.29	0.29	0.00	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.62	0.63	0.00	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.22	0.21	0.00	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.23	0.22	5.04	0% - 50%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	1.33	1.29	3.18	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.42	0.41	0.00	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.36	0.37	3.28	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.58	1.59	0.777	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.25	0.30	18.4	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.3	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.06	0.05	0.00	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: 3637760) - continued									
EB2110942-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.07	0.07	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.32	0.32	0.00	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	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: 3637760) - continued									
EB2110910-004	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	12.8	12.6	1.58	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	8.17	7.88	3.61	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	11.7	11.5	1.81	0% - 20%
EB2110942-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	2.95	2.89	2.05	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.95	1.92	1.55	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.66	2.61	1.90	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: **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: 3637760)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	97.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	113	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	103	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	98.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	92.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	99.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	87.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	101	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	84.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	72.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	97.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	71.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	123	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	67.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	85.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	80.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	89.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	86.8	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	79.5	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	92.3	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: 3637760) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	67.6	64.2	133
EP231P: PFAS Sums (QCLot: 3637760)								
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	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	91.0	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	83.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	76.3	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	91.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	82.1	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	73.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	76.9	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	88.6	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	80.1	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	80.0	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	77.2	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	74.6	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	73.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	76.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	68.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	93.5	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	59.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	101	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	81.6	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760) - continued							
EB2110935-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	74.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	83.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	92.6	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	70.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	90.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	71.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	73.3	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	73.5	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110940**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW056_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW056_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW056_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW056_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW056_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**28-Apr-2021**	10-Oct-2021	✓

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	1	18	**5.56**	**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 : **EB2110942**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM ESKIES	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
- 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.

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)
EB2110942-001	15-Apr-2021 00:00	0207_MW296_210415	✓
EB2110942-002	15-Apr-2021 00:00	0207_MW297_210415	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110942**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021 14:31
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW296_210415	0207_MW297_210415	----	----	----
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2110942-001	EB2110942-002	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.22**	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.23**	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**1.33**	<0.02	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.06**	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.62**	<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		**0.07**	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.32**	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.04**	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.06**	<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	0207_MW296_210415	0207_MW297_210415	----	----	----
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2110942-001	EB2110942-002	--------	--------	--------
					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		**2.95**	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.95**	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**2.66**	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**110**	**110**	----	----	----
13C8-PFOA	----	0.02	%		**101**	**99.2**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110942**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	4.03	3.87	4.04	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.62	0.64	3.55	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.80	0.81	1.42	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	4.14	4.01	3.35	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.29	0.29	0.00	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2110942-001	0207_MW296_210415	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.62	0.63	0.00	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.22	0.21	0.00	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.23	0.22	5.04	0% - 50%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	1.33	1.29	3.18	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.42	0.41	0.00	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.36	0.37	3.28	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.58	1.59	0.777	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.25	0.30	18.4	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.3	0.00	No Limit
EB2110942-001	0207_MW296_210415	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.06	0.05	0.00	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 (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637760) - continued									
EB2110942-001	0207_MW296_210415	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.07	0.07	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.32	0.32	0.00	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	0207_MW296_210415	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	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: 3637760) - continued									
EB2110910-004	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	0207_MW296_210415	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	12.8	12.6	1.58	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	8.17	7.88	3.61	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	11.7	11.5	1.81	0% - 20%
EB2110942-001	0207_MW296_210415	EP231X: Sum of PFAS	----	0.01	µg/L	2.95	2.89	2.05	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.95	1.92	1.55	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.66	2.61	1.90	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: **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: 3637760)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	97.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	113	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	103	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	98.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	92.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	99.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	87.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	101	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	84.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	72.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	97.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	71.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	123	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	67.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	85.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	80.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	89.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	86.8	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	79.5	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	92.3	67.0	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	67.6	64.2	133
EP231P: PFAS Sums (QCLot: 3637760)								
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: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	91.0	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	83.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	76.3	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	91.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	82.1	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	73.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	76.9	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	88.6	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	80.1	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	80.0	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	77.2	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	74.6	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	73.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	76.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	68.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	93.5	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	59.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	101	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	81.6	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760) - continued							
EB2110935-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	74.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	83.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	92.6	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	70.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	90.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	71.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	73.3	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	73.5	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110942**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]	No. of samples received	: 2
Order number	: 60612563 2.1	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.**
- **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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW296_210415, 0207_MW297_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW296_210415, 0207_MW297_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW296_210415, 0207_MW297_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW296_210415, 0207_MW297_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW296_210415, 0207_MW297_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓

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	1	18	**5.56**	**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 : **EB2110944**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2110944-001	15-Apr-2021 00:00	0207_MW038_210415	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110944**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021 14:28
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW038_210415	----	----	----	----
				Sampling date / time	15-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110944-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.04**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.04**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.22**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.02**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.50**	----	----	----	----
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		**0.06**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.03**	----	----	----	----
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	0207_MW038_210415	----	----	----	----
				Sampling date / time	15-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110944-001	--------	--------	--------	--------
					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		**0.91**	----	----	----	----
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		**0.85**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.0**	----	----	----	----
13C8-PFOA	----	0.02	%		**98.3**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110944**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021
Sampler	[redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	4.03	3.87	4.04	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.62	0.64	3.55	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.80	0.81	1.42	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	4.14	4.01	3.35	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.29	0.29	0.00	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.62	0.63	0.00	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.22	0.21	0.00	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.23	0.22	5.04	0% - 50%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	1.33	1.29	3.18	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.42	0.41	0.00	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.36	0.37	3.28	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.58	1.59	0.777	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.25	0.30	18.4	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.3	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.06	0.05	0.00	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 (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637760) - continued									
EB2110942-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.07	0.07	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.32	0.32	0.00	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	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: 3637760) - continued									
EB2110910-004	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	12.8	12.6	1.58	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	8.17	7.88	3.61	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	11.7	11.5	1.81	0% - 20%
EB2110942-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	2.95	2.89	2.05	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.95	1.92	1.55	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.66	2.61	1.90	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: **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: 3637760)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	97.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	113	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	103	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	98.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	92.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	99.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	87.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	101	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	84.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	72.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	97.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	71.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	123	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	67.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	85.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	80.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	89.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	86.8	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	79.5	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	92.3	67.0	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	67.6	64.2	133
EP231P: PFAS Sums (QCLot: 3637760)								
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: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	91.0	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	83.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	76.3	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	91.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	82.1	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	73.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	76.9	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	88.6	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	80.1	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	80.0	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	77.2	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	74.6	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	73.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	76.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	68.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	93.5	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	59.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	101	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	81.6	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760) - continued							
EB2110935-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	74.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	83.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	92.6	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	70.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	90.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	71.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	73.3	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	73.5	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110944**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW038_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW038_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW038_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW038_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW038_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓

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	1	18	**5.56**	**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 : **EB2110946**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	[redacted]
Facsimile	: [redacted]	Facsimile	
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2110946-001	15-Apr-2021 00:00	0207_MW113_210415	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110946**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021 14:00
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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.
- EP231X PFAS: The LOR of PFBS for sample “0207_MW113_210415” has been raised due to sample matrix interferences.
- 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	0207_MW113_210415	----	----	----	----
				Sampling date / time	15-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110946-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.10	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.05**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.30**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.15**	----	----	----	----
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		**0.06**	----	----	----	----
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	0207_MW113_210415	----	----	----	----
				Sampling date / time	15-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110946-001	--------	--------	--------	--------
					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		**0.57**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.45**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.52**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	----	----	----	----
13C8-PFOA	----	0.02	%		**101**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110946**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	4.03	3.87	4.04	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.62	0.64	3.55	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.80	0.81	1.42	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	4.14	4.01	3.35	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.29	0.29	0.00	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.62	0.63	0.00	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.22	0.21	0.00	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.23	0.22	5.04	0% - 50%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	1.33	1.29	3.18	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.42	0.41	0.00	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.36	0.37	3.28	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.58	1.59	0.777	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.25	0.30	18.4	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.3	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.06	0.05	0.00	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 (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637760) - continued									
EB2110942-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.07	0.07	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.32	0.32	0.00	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	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: 3637760) - continued									
EB2110910-004	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	12.8	12.6	1.58	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	8.17	7.88	3.61	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	11.7	11.5	1.81	0% - 20%
EB2110942-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	2.95	2.89	2.05	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.95	1.92	1.55	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.66	2.61	1.90	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: **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: 3637760)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	97.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	113	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	103	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	98.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	92.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	99.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	87.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	101	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	84.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	72.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	97.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	71.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	123	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	67.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	85.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	80.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	89.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	86.8	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	79.5	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	92.3	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: 3637760) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	67.6	64.2	133
EP231P: PFAS Sums (QCLot: 3637760)								
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	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	91.0	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	83.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	76.3	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	91.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	82.1	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	73.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	76.9	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	88.6	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	80.1	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	80.0	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	77.2	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	74.6	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	73.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	76.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	68.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	93.5	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	59.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	101	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	81.6	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760) - continued							
EB2110935-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	74.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	83.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	92.6	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	70.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	90.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	71.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	73.3	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	73.5	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110946**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 29-Apr-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW113_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW113_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW113_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW113_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW113_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓

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	1	18	**5.56**	**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 : **EB2110947**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: +[redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM ESKIES	No. of samples received / analysed	: 12 / 12

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.
- 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.

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)
EB2110947-004	15-Apr-2021 00:00	0207_SD018_210415	✓	✓
EB2110947-006	15-Apr-2021 00:00	0207_SD032_210415	✓	✓
EB2110947-007	15-Apr-2021 00:00	0207_SD017_210415	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2110947-001	15-Apr-2021 00:00	0207_MW295_210415	✓
EB2110947-002	15-Apr-2021 00:00	0207_MW294_210415	✓
EB2110947-003	15-Apr-2021 00:00	0207_SW056_210415	✓
EB2110947-005	15-Apr-2021 00:00	0207_SW032_210415	✓
EB2110947-008	15-Apr-2021 00:00	0207_MW270_210415	✓
EB2110947-009	15-Apr-2021 00:00	0207_MW271_210415	✓
EB2110947-010	15-Apr-2021 00:00	0207_MW268_210415	✓
EB2110947-011	15-Apr-2021 00:00	0207_MW269_210415	✓
EB2110947-012	15-Apr-2021 00:00	0207_MW267_210415	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

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- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110947**	Page	: 1 of 9
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 23-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021 16:54
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 12		
No. of samples analysed	: 12		

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]	[redacted]	Brisbane Inorganics, Stafford, QLD 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 Contact 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.
- EP231X PFAS: The LORs of PFBA and PFPeA for sample “0207_MW267_210415” have been raised due to sample matrix interferences.
- 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	0207_SD018_210415	0207_SD032_210415	0207_SD017_210415	----	----
			Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EB2110947-004	EB2110947-006	EB2110947-007	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**30.4**	**40.0**	**19.8**	**----**	**----**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	**0.0002**	**----**	**----**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0002**	<0.0002	**0.0164**	**----**	**----**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	**0.0033**	**----**	**----**
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	**0.0004**	**----**	**----**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<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	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	**0.0006**	**----**	**----**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	**0.0022**	**----**	**----**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	**0.0018**	**----**	**----**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	**0.0015**	**----**	**----**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	**0.0003**	**----**	**----**
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: SEDIMENT (Matrix: SOIL)				Sample ID	0207_SD018_210415	0207_SD032_210415	0207_SD017_210415	----	----
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2110947-004	EB2110947-006	EB2110947-007	--------	--------
					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	**0.0009**	----	----
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		**0.0002**	<0.0002	**0.0276**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0002**	<0.0002	**0.0166**	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0002**	<0.0002	**0.0179**	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**94.0**	**88.0**	**99.0**	----	----
13C8-PFOA	----	0.0002	%		**94.5**	**82.0**	**92.5**	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW295_210415	0207_MW294_210415	0207_SW056_210415	0207_SW032_210415	0207_MW270_210415
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00
					EB2110947-001	EB2110947-002	EB2110947-003	EB2110947-005	EB2110947-008
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.08**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.10**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	**0.62**	<0.02	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.04**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.65**	**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	**0.4**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.77**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.36**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.22**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.13**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.05**	<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	0207_MW295_210415	0207_MW294_210415	0207_SW056_210415	0207_SW032_210415	0207_MW270_210415
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110947-001	EB2110947-002	EB2110947-003	EB2110947-005	EB2110947-008
					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		**0.21**	<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		**0.21**	**3.44**	**0.02**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**1.27**	**0.02**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.21**	**3.23**	**0.02**	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**109**	**104**	**110**	**106**	**100**
13C8-PFOA	----	0.02	%		**100**	**94.9**	**98.6**	**97.9**	**98.7**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW271_210415	0207_MW268_210415	0207_MW269_210415	0207_MW267_210415	----
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	----
Compound	CAS Number	LOR	Unit		EB2110947-009	EB2110947-010	EB2110947-011	EB2110947-012	--------
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.04**	<0.02	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.04**	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	**0.25**	**0.04**	<0.02	----
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	**0.18**	**0.10**	**0.04**	----
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	<0.2	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.30	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.07**	<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	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW271_210415	0207_MW268_210415	0207_MW269_210415	0207_MW267_210415	----
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	----
Compound	CAS Number	LOR	Unit		EB2110947-009	EB2110947-010	EB2110947-011	EB2110947-012	--------
					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	----
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	**0.59**	**0.14**	**0.04**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.43**	**0.14**	**0.04**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.55**	**0.14**	**0.04**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**95.9**	**102**	**101**	**105**	----
13C8-PFOA	----	0.02	%		**98.9**	**97.7**	**95.9**	**96.6**	----

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

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110947**	Page	: 1 of 13
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 23-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021
Sampler	[redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 12		
No. of samples analysed	: 12		

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]	[redacted]	Brisbane Inorganics, Stafford, QLD
	[redacted]	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

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: 3637969)									
EB2110947-004	0207_SD018_210415	EA055: Moisture Content	----	0.1	%	30.4	31.4	3.26	0% - 20%
EB2110967-017	Anonymous	EA055: Moisture Content	----	0.1	%	14.7	15.2	3.23	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3637967)									
EB2110947-004	0207_SD018_210415	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0002	0.0002	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EB2110967-017	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0006	0.0007	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0114	0.0108	5.88	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0008	0.0008	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637967)									
EB2110947-004	0207_SD018_210415	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	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: 3637967) - continued									
EB2110947-004	0207_SD018_210415	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EB2110967-017	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0002	0.0003	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0012	0.0013	11.1	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0004	0.0004	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0021	0.0026	24.0	0% - 50%
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0002	0.0003	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.0006	19.3	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3637967)									
EB2110947-004	0207_SD018_210415	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2110967-017	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	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: 3637967)									
EB2110947-004	0207_SD018_210415	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2110967-017	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	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: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	4.03	3.87	4.04	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.62	0.64	3.55	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.80	0.81	1.42	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	4.14	4.01	3.35	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.29	0.29	0.00	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.62	0.63	0.00	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.22	0.21	0.00	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.23	0.22	5.04	0% - 50%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	1.33	1.29	3.18	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.06	0.06	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.42	0.41	0.00	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 (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637760) - continued									
EB2110910-004	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.36	0.37	3.28	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.58	1.59	0.777	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.25	0.30	18.4	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.3	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.06	0.05	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.07	0.07	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.32	0.32	0.00	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	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: 3637760) - continued									
EB2110910-004	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	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: 3637760) - continued									
EB2110910-004	Anonymous	EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110942-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3637760)									
EB2110910-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	12.8	12.6	1.58	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	8.17	7.88	3.61	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	11.7	11.5	1.81	0% - 20%
EB2110942-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	2.95	2.89	2.05	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.95	1.92	1.55	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.66	2.61	1.90	0% - 20%
EP231P: PFAS Sums (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.02	0.02	0.00	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: 3637967)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	88.2	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	83.3	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	83.5	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	85.3	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	82.3	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	83.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637967)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	80.5	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.2	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.8	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.4	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.6	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	77.2	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.4	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.8	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.6	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637967)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.8	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	84.4	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.7	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	85.4	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.2	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.2	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637967)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	86.3	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	94.1	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

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: 3637967) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	106	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: 3637760)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	97.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	113	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	103	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	98.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.7	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643050)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	84.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	95.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	81.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.8	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	87.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	92.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	99.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	87.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	101	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	84.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	72.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	97.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	71.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	123	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643050)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	73.1	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	86.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	84.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	86.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	82.8	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: 3643050) - continued								
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	86.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	84.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637760)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	67.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	85.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	80.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	89.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.8	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643050)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	82.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	74.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	72.6	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	82.7	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.6	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	81.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	85.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	86.8	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	79.5	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	92.3	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	67.6	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643050)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	93.9	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	85.2	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	90.8	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	89.2	64.2	133
EP231P: PFAS Sums (QCLot: 3637760)								

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
EP231P: PFAS Sums (QCLot: 3637760) - continued								
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: 3643050)								
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	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3637967)							
EB2110947-006	0207_SD032_210415	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	85.9	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	79.9	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	79.6	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	81.9	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	87.5	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	75.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637967)							
EB2110947-006	0207_SD032_210415	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	77.7	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	76.4	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	80.4	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	82.8	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	78.4	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	80.0	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	79.2	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	85.6	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	82.4	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	86.0	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	91.5	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637967)							
EB2110947-006	0207_SD032_210415	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	95.6	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: 3637967) - continued							
EB2110947-006	0207_SD032_210415	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	82.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	82.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	73.7	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	96.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	73.2	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	78.8	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637967)							
EB2110947-006	0207_SD032_210415	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	84.2	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	78.8	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	95.8	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	92.9	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: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	91.0	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	83.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	76.3	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	91.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	82.1	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	73.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	76.9	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	88.6	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	80.1	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	80.0	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	77.2	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	74.6	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	73.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	76.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	68.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	93.5	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: 3637760)							
EB2110935-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	59.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	101	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	81.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	74.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	83.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	92.6	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	70.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637760)							
EB2110935-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	90.8	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	71.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	73.3	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	73.5	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110947**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]	No. of samples received	: 12
Order number	: 60612563 2.1	No. of samples analysed	: 12

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
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	3	33	9.09	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	33	3.03	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)								
0207_SD018_210415, 0207_SD017_210415	0207_SD032_210415,	**15-Apr-2021**	**----**	----	----	**23-Apr-2021**	29-Apr-2021	✓
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X)								
0207_SD018_210415, 0207_SD017_210415	0207_SD032_210415,	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X)								
0207_SD018_210415, 0207_SD017_210415	0207_SD032_210415,	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE Soil Jar (EP231X)								
0207_SD018_210415, 0207_SD017_210415	0207_SD032_210415,	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE Soil Jar (EP231X)								
0207_SD018_210415, 0207_SD017_210415	0207_SD032_210415,	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X)								
0207_SD018_210415, 0207_SD017_210415	0207_SD032_210415,	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓

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) 0207_MW295_210415, 0207_MW294_210415, 0207_SW056_210415, 0207_SW032_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0207_MW270_210415, 0207_MW271_210415, 0207_MW268_210415, 0207_MW269_210415, 0207_MW267_210415	**15-Apr-2021**	**28-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	12-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW295_210415, 0207_MW294_210415, 0207_SW056_210415, 0207_SW032_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0207_MW270_210415, 0207_MW271_210415, 0207_MW268_210415, 0207_MW269_210415, 0207_MW267_210415	**15-Apr-2021**	**28-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	12-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW295_210415, 0207_MW294_210415, 0207_SW056_210415, 0207_SW032_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0207_MW270_210415, 0207_MW271_210415, 0207_MW268_210415, 0207_MW269_210415, 0207_MW267_210415	**15-Apr-2021**	**28-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	12-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW295_210415, 0207_MW294_210415, 0207_SW056_210415, 0207_SW032_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0207_MW270_210415, 0207_MW271_210415, 0207_MW268_210415, 0207_MW269_210415, 0207_MW267_210415	**15-Apr-2021**	**28-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	12-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW295_210415, 0207_MW294_210415, 0207_SW056_210415, 0207_SW032_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**28-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0207_MW270_210415, 0207_MW271_210415, 0207_MW268_210415, 0207_MW269_210415, 0207_MW267_210415	**15-Apr-2021**	**28-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	12-Oct-2021	✓

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	17	**11.76**	**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	3	33	**9.09**	**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

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 : **EB2110949**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2110949-001	19-Apr-2021 00:00	0207_MW021_210419	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110949**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: +[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021 16:04
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW021_210419	----	----	----	----
				Sampling date / time	19-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110949-001	--------	--------	--------	--------
					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		**0.23**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**1.62**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.27**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**4.48**	----	----	----	----
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		**0.06**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.28**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.05**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.12**	----	----	----	----
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	0207_MW021_210419	----	----	----	----
				Sampling date / time	19-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110949-001	--------	--------	--------	--------
					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		**7.29**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**6.10**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**6.79**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**95.1**	----	----	----	----
13C8-PFOA	----	0.02	%		**97.9**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110949**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	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: 3643050) - continued									
EB2110954-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.02	0.02	0.00	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: 3643050)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	84.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	95.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	81.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.8	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	87.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643050)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	73.1	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	86.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	84.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	86.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	82.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	86.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	84.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643050)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	82.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	74.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	72.6	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	82.7	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.6	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	81.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	85.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643050)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	93.9	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	85.2	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	90.8	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: 3643050) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	89.2	64.2	133
EP231P: PFAS Sums (QCLot: 3643050)								
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	: **EB2110949**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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 / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	15	6.67	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	15	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: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW021_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW021_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW021_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW021_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW021_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓

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	15	**6.67**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	15	**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 : **EB2110952**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2110952-001	19-Apr-2021 00:00	0207_MW149_210419	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110952**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021 12:13
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW149_210419	----	----	----	----
				Sampling date / time	19-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110952-001	--------	--------	--------	--------
					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	0.02	µg/L		<0.02	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW149_210419	----	----	----	----
				Sampling date / time	19-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110952-001	--------	--------	--------	--------
					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		<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	%		**100**	----	----	----	----
13C8-PFOA	----	0.02	%		**96.0**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110952**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	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: 3643050) - continued									
EB2110954-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.02	0.02	0.00	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: 3643050)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	84.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	95.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	81.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.8	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	87.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643050)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	73.1	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	86.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	84.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	86.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	82.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	86.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	84.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643050)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	82.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	74.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	72.6	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	82.7	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.6	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	81.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	85.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643050)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	93.9	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	85.2	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	90.8	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: 3643050) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	89.2	64.2	133
EP231P: PFAS Sums (QCLot: 3643050)								
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.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110952**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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 / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	15	6.67	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	15	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: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW149_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW149_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW149_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW149_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW149_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓

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	15	**6.67**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	15	**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 : **EB2110954**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: Christopher.Redford@ALSGlobal.com
Telephone	: [redacted]	Telephone	: +[redacted]
Facsimile	: [redacted]	Facsimile	: +[redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C
Receipt Detail	: MEDIUM ESKIES	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
- 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.

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)
EB2110954-001	19-Apr-2021 00:00	0207_MW293_210419	✓
EB2110954-002	19-Apr-2021 00:00	0207_MW292_210419	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110954**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021 12:13
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW293_210419	0207_MW292_210419	----	----	----
				Sampling date / time	19-Apr-2021 00:00	19-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2110954-001	EB2110954-002	--------	--------	--------
					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	0.02	µg/L		<0.02	**0.17**	----	----	----
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**	**0.14**	----	----	----
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	0207_MW293_210419	0207_MW292_210419	----	----	----
				Sampling date / time	19-Apr-2021 00:00	19-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2110954-001	EB2110954-002	--------	--------	--------
					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		**0.02**	**0.31**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.02**	**0.31**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.02**	**0.31**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**96.6**	----	----	----
13C8-PFOA	----	0.02	%		**96.3**	**98.5**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110954**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3643050)									
EB2110954-001	0207_MW293_210419	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643050)									
EB2110954-001	0207_MW293_210419	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643050)									
EB2110954-001	0207_MW293_210419	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	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: 3643050) - continued									
EB2110954-001	0207_MW293_210419	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643050)									
EB2110954-001	0207_MW293_210419	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3643050)									
EB2110954-001	0207_MW293_210419	EP231X: Sum of PFAS	----	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.02	0.02	0.00	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: 3643050)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	84.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	95.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	81.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.8	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	87.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643050)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	73.1	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	86.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	84.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	86.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	82.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	86.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	84.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643050)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	82.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	74.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	72.6	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	82.7	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.6	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	81.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	85.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643050)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	93.9	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	85.2	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	90.8	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: 3643050) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	89.2	64.2	133
EP231P: PFAS Sums (QCLot: 3643050)								
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	: **EB2110954**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]	No. of samples received	: 2
Order number	: 60612563 2.1	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.**
- **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
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	15	6.67	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	15	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: Date extracted	Due for extraction	Evaluation	Analysis: Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW293_210419, 0207_MW292_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW293_210419, 0207_MW292_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW293_210419, 0207_MW292_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW293_210419, 0207_MW292_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW293_210419, 0207_MW292_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓

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	15	**6.67**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	15	**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 : **EB2110956**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2110956-001	19-Apr-2021 00:00	0207_MW032_210419	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110956**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021 16:06
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW032_210419	----	----	----	----
				Sampling date / time	19-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110956-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.22**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.29**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**1.85**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.14**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**5.33**	----	----	----	----
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		**0.07**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.28**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.05**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.14**	----	----	----	----
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	0207_MW032_210419	----	----	----	----
				Sampling date / time	19-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110956-001	--------	--------	--------	--------
					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		**8.37**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**7.18**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**7.94**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	----	----	----	----
13C8-PFOA	----	0.02	%		**97.9**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110956**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	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: 3643050) - continued									
EB2110954-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.02	0.02	0.00	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: 3643050)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	84.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	95.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	81.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.8	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	87.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643050)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	73.1	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	86.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	84.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	86.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	82.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	86.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	84.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643050)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	82.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	74.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	72.6	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	82.7	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.6	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	81.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	85.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643050)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	93.9	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	85.2	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	90.8	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: 3643050) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	89.2	64.2	133
EP231P: PFAS Sums (QCLot: 3643050)								
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.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110956**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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 / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	15	6.67	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	15	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: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW032_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW032_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW032_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW032_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW032_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓

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	15	**6.67**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	15	**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 : **EB2110957**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: +[redacted]	Telephone	: [redacted]
Facsimile	: +[redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2110957-001	19-Apr-2021 00:00	0207_MW132_210419	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110957**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021 12:13
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW132_210419	----	----	----	----
				Sampling date / time	19-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110957-001	--------	--------	--------	--------
					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	0.02	µg/L		<0.02	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW132_210419	----	----	----	----
				Sampling date / time	19-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110957-001	--------	--------	--------	--------
					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		<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	%		**92.8**	----	----	----	----
13C8-PFOA	----	0.02	%		**98.2**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110957**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	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: 3643050) - continued									
EB2110954-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.02	0.02	0.00	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: 3643050)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	84.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	95.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	81.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.8	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	87.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643050)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	73.1	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	86.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	84.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	86.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	82.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	86.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	84.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643050)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	82.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	74.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	72.6	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	82.7	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.6	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	81.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	85.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643050)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	93.9	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	85.2	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	90.8	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: 3643050) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	89.2	64.2	133
EP231P: PFAS Sums (QCLot: 3643050)								
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.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110957**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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 / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	15	6.67	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	15	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: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW132_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW132_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW132_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW132_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW132_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓

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	15	**6.67**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	15	**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 : **EB2110958**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 23-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM ESKIES	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
- **Please be advised, Sample MW293 was received labelled as MW283. The chain of custody ID has been reported. If this is incorrect please contact client services at** [redacted]
- **23/4/21: SRN has been resent to acknowledge that sample I.D has been updated to MW0283 as requested. 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.

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)
EB2110958-004	20-Apr-2021 00:00	0207_SED045_210420	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2110958-001	13-Apr-2021 00:00	0207_MW003_210413	✓
EB2110958-002	20-Apr-2021 00:00	0207_MW283_210420	✓
EB2110958-003	20-Apr-2021 00:00	0207_SW059_210420	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110958**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 23-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021 16:41
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	Brisbane Inorganics, Stafford, QLD 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 Contact 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: SEDIMENT (Matrix: SOIL)				Sample ID	0207_SED045_210420	----	----	----	----
				Sampling date / time	20-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110958-004	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**35.3**	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0006**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0074**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		**0.0002**	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0003**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		**0.0002**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0007**	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		**0.0002**	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		**0.0003**	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	----	----	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0207_SED045_210420	----	----	----	----
				Sampling date / time	20-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110958-004	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<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	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0099**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0080**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0092**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**95.5**	----	----	----	----
13C8-PFOA	----	0.0002	%		**97.5**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW003_210413	0207_MW283_210420	0207_SW059_210420	----	----
				Sampling date / time	13-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2110958-001	EB2110958-002	EB2110958-003	--------	--------
					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	0.02	µg/L		<0.02	<0.02	<0.02	----	----
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	**0.03**	----	----
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	----	----
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	0207_MW003_210413	0207_MW283_210420	0207_SW059_210420	----	----
				Sampling date / time	13-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2110958-001	EB2110958-002	EB2110958-003	--------	--------
					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		<0.01	<0.01	**0.03**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.03**	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**0.03**	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.6**	**101**	**96.2**	----	----
13C8-PFOA	----	0.02	%		**94.9**	**97.8**	**96.2**	----	----

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

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110958**	Page	: 1 of 9
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 23-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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*
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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

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: 3637969)									
EB2110947-004	Anonymous	EA055: Moisture Content	----	0.1	%	30.4	31.4	3.26	0% - 20%
EB2110967-017	Anonymous	EA055: Moisture Content	----	0.1	%	14.7	15.2	3.23	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3637967)									
EB2110947-004	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0002	0.0002	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EB2110967-017	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0006	0.0007	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0114	0.0108	5.88	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0008	0.0008	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637967)									
EB2110947-004	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	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: 3637967) - continued									
EB2110947-004	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EB2110967-017	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0002	0.0003	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0012	0.0013	11.1	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0004	0.0004	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0021	0.0026	24.0	0% - 50%
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0002	0.0003	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.0006	19.3	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3637967)									
EB2110947-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2110967-017	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	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: 3637967)									
EB2110947-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2110967-017	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	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: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	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: 3643050) - continued									
EB2110954-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.02	0.02	0.00	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: 3637967)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	88.2	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	83.3	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	83.5	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	85.3	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	82.3	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	83.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637967)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	80.5	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.2	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.8	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.4	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.6	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	77.2	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.4	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.8	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.6	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637967)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.8	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	84.4	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.7	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	85.4	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.2	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.2	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637967)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	86.3	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	94.1	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

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: 3637967) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	106	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: 3643050)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	84.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	95.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	81.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.8	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	87.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643050)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	73.1	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	86.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	84.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	86.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	82.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	86.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	84.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643050)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	82.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	74.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	72.6	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	82.7	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.6	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	81.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	85.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643050)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	93.9	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	85.2	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: 3643050) - continued								
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	90.8	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	89.2	64.2	133
EP231P: PFAS Sums (QCLot: 3643050)								
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: 3637967)							
EB2110947-006	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	85.9	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	79.9	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	79.6	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	81.9	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	87.5	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	75.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637967)							
EB2110947-006	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	77.7	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	76.4	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	80.4	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	82.8	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	78.4	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	80.0	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	79.2	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	85.6	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	82.4	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	86.0	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	91.5	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637967)							
EB2110947-006	Anonymous	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	82.5	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: 3637967) - continued							
EB2110947-006	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	82.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	73.7	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	96.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	73.2	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	78.8	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637967)							
EB2110947-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	84.2	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	78.8	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	95.8	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	92.9	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110958**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]	No. of samples received	: 4
Order number	: 60612563 2.1	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
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	15	6.67	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	15	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	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055)							
0207_SED045_210420	**20-Apr-2021**	**----**	----	----	**23-Apr-2021**	04-May-2021	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0207_SED045_210420	**20-Apr-2021**	**27-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
0207_SED045_210420	**20-Apr-2021**	**27-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
0207_SED045_210420	**20-Apr-2021**	**27-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0207_SED045_210420	**20-Apr-2021**	**27-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
0207_SED045_210420	**20-Apr-2021**	**27-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	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) 0207_MW003_210413	**13-Apr-2021**	**28-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0207_MW283_210420, 0207_SW059_210420	**20-Apr-2021**	**28-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW003_210413	**13-Apr-2021**	**28-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0207_MW283_210420, 0207_SW059_210420	**20-Apr-2021**	**28-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW003_210413	**13-Apr-2021**	**28-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0207_MW283_210420, 0207_SW059_210420	**20-Apr-2021**	**28-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW003_210413	**13-Apr-2021**	**28-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0207_MW283_210420, 0207_SW059_210420	**20-Apr-2021**	**28-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW003_210413	**13-Apr-2021**	**28-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0207_MW283_210420, 0207_SW059_210420	**20-Apr-2021**	**28-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓

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	17	**11.76**	**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	15	**6.67**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	15	**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 : **EB2110959**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2110959-001	20-Apr-2021 00:00	0207_MW281_210420	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110959**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021 12:14
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW281_210420	----	----	----	----
				Sampling date / time	20-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110959-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.26**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.28**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**1.33**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.14**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**2.35**	----	----	----	----
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		**0.10**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.38**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.10**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.20**	----	----	----	----
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	0207_MW281_210420	----	----	----	----
				Sampling date / time	20-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2110959-001	--------	--------	--------	--------
					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		**5.14**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**3.68**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**4.72**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.7**	----	----	----	----
13C8-PFOA	----	0.02	%		**95.1**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110959**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	[redacted]	Telephone	[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	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: 3643050) - continued									
EB2110954-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3643050)									
EB2110954-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.02	0.02	0.00	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: 3643050)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	84.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	95.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	81.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	91.8	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	87.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643050)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	73.1	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	86.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	84.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	86.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	82.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	86.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	84.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643050)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	82.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	74.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	72.6	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	82.7	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.6	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	81.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	85.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643050)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	93.9	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	85.2	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	90.8	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: 3643050) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	89.2	64.2	133
EP231P: PFAS Sums (QCLot: 3643050)								
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.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110959**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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 / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	15	6.67	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	15	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: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW281_210420	**20-Apr-2021**	**28-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW281_210420	**20-Apr-2021**	**28-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW281_210420	**20-Apr-2021**	**28-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW281_210420	**20-Apr-2021**	**28-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW281_210420	**20-Apr-2021**	**28-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓

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	15	**6.67**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	15	**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 : **EB2110961**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: +[redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM ESKIES	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
- 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.

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)
EB2110961-001	21-Apr-2021 00:00	0207_MW288_210421	✓
EB2110961-002	21-Apr-2021 00:00	0207_MW289_210421	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110961**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021 12:14
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW288_210421	0207_MW289_210421	----	----	----
				Sampling date / time	21-Apr-2021 00:00	21-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2110961-001	EB2110961-002	--------	--------	--------
					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	0.02	µg/L		<0.02	<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		<0.01	<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	----	----	----
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	0207_MW288_210421	0207_MW289_210421	----	----	----
				Sampling date / time	21-Apr-2021 00:00	21-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2110961-001	EB2110961-002	--------	--------	--------
					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		<0.01	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**93.6**	----	----	----
13C8-PFOA	----	0.02	%		**96.7**	**97.9**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110961**	Page	: 1 of 6
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3643051)									
EB2110965-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.01	0.02	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.10	0.09	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643051)									
EB2110965-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643051)									
EB2110965-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	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: 3643051) - continued									
EB2110965-004	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643051)									
EB2110965-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3643051)									
EB2110965-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.26	0.24	8.00	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.11	0.11	0.00	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.23	0.22	4.44	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: **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: 3643051)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.7	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	101	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	84.9	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	100	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	107	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	82.6	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643051)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	78.1	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	95.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	90.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	88.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	85.2	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	86.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	91.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643051)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	80.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	82.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	83.4	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	93.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	93.7	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	90.6	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	91.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643051)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	91.1	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	105	67.0	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643051) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	88.8	64.2	133
EP231P: PFAS Sums (QCLot: 3643051)								
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: 3643051)							
EB2110965-005	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	74.9	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	85.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	98.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	111	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	92.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643051)							
EB2110965-005	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	75.3	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	95.4	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	79.1	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	88.5	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	94.7	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	88.7	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	90.0	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	82.8	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	94.0	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	91.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643051)							
EB2110965-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	66.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	77.6	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643051) - continued							
EB2110965-005	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	75.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	81.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	91.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	96.2	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	79.9	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643051)							
EB2110965-005	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	88.5	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	102	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	92.1	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	130	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110961**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]	No. of samples received	: 2
Order number	: 60612563 2.1	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							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2110965--005	Anonymous	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	16	6.25	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)								
0207_MW288_210421,	0207_MW289_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	18-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0207_MW288_210421,	0207_MW289_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	18-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0207_MW288_210421,	0207_MW289_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	18-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0207_MW288_210421,	0207_MW289_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	18-Oct-2021	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0207_MW288_210421,	0207_MW289_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	18-Oct-2021	✓

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	16	**6.25**	**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	1	16	**6.25**	**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 : **EB2110962**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	[redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	[redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM ESKIES	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
- 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.

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)
EB2110962-001	21-Apr-2021 00:00	0207_MW290_210421	✓
EB2110962-002	21-Apr-2021 00:00	0207_MW291_210421	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110962**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	[redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021 12:14
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW290_210421	0207_MW291_210421	----	----	----
				Sampling date / time	21-Apr-2021 00:00	21-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2110962-001	EB2110962-002	--------	--------	--------
					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	0.02	µg/L		**0.23**	<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		**0.02**	**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	0207_MW290_210421	0207_MW291_210421	----	----	----
				Sampling date / time	21-Apr-2021 00:00	21-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2110962-001	EB2110962-002	--------	--------	--------
					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	**0.07**	----	----	----
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		**0.31**	**0.10**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.25**	**0.03**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.29**	**0.10**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.9**	**98.3**	----	----	----
13C8-PFOA	----	0.02	%		**95.9**	**96.2**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110962**	Page	: 1 of 6
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3643051)									
EB2110965-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.01	0.02	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.10	0.09	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643051)									
EB2110965-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643051)									
EB2110965-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	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: 3643051) - continued									
EB2110965-004	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643051)									
EB2110965-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3643051)									
EB2110965-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.26	0.24	8.00	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.11	0.11	0.00	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.23	0.22	4.44	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: **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: 3643051)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.7	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	101	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	84.9	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	100	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	107	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	82.6	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643051)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	78.1	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	95.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	90.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	88.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	85.2	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	86.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	91.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643051)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	80.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	82.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	83.4	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	93.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	93.7	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	90.6	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	91.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643051)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	91.1	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	105	67.0	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643051) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	88.8	64.2	133
EP231P: PFAS Sums (QCLot: 3643051)								
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: 3643051)							
EB2110965-005	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	74.9	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	85.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	98.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	111	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	92.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643051)							
EB2110965-005	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	75.3	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	95.4	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	79.1	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	88.5	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	94.7	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	88.7	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	90.0	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	82.8	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	94.0	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	91.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643051)							
EB2110965-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	66.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	77.6	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643051) - continued							
EB2110965-005	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	75.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	81.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	91.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	96.2	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	79.9	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643051)							
EB2110965-005	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	88.5	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	102	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	92.1	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	130	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110962**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]	No. of samples received	: 2
Order number	: 60612563 2.1	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							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2110965--005	Anonymous	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	16	6.25	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)								
0207_MW290_210421,	0207_MW291_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	18-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0207_MW290_210421,	0207_MW291_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	18-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0207_MW290_210421,	0207_MW291_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	18-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0207_MW290_210421,	0207_MW291_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	18-Oct-2021	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0207_MW290_210421,	0207_MW291_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	18-Oct-2021	✓

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	16	**6.25**	**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	1	16	**6.25**	**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 : **EB2110965**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_1435_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM ESKIES	No. of samples received / analysed	: 12 / 12

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.
- 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.**
- **Sample "1435_QC249_210416" has been forwarded to NMI , 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.

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)
EB2110965-001	16-Apr-2021 00:00	1435_MW002_210416	✓
EB2110965-002	16-Apr-2021 00:00	1435_QC149_210416	✓
EB2110965-003	16-Apr-2021 00:00	1435_QC326_210416	✓
EB2110965-004	16-Apr-2021 00:00	1435_MW011_210416	✓
EB2110965-005	16-Apr-2021 00:00	1435_MW010_210416	✓
EB2110965-006	16-Apr-2021 00:00	1435_MW004_210416	✓
EB2110965-007	16-Apr-2021 00:00	1435_MW006_210416	✓
EB2110965-008	16-Apr-2021 00:00	1435_MW009_210416	✓
EB2110965-009	16-Apr-2021 00:00	1435_MW003_210416	✓
EB2110965-010	16-Apr-2021 00:00	1435_MW007_210416	✓
EB2110965-011	16-Apr-2021 00:00	1435_MW008_210416	✓
EB2110965-012	16-Apr-2021 00:00	1435_MW013_210416	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110965**	Page	: 1 of 9
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_1435_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021 15:18
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 12		
No. of samples analysed	: 12		

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]	[redacted]	Brisbane Organics, Stafford, QLD
	[redacted]	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 Contact 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: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	1435_MW002_210416	1435_QC149_210416	1435_QC326_210416	1435_MW011_210416	1435_MW010_210416
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00
					EB2110965-001	EB2110965-002	EB2110965-003	EB2110965-004	EB2110965-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.31**	**0.31**	<0.02	**0.03**	**0.27**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.25**	**0.24**	<0.02	**0.03**	**0.25**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.56**	**0.56**	<0.02	**0.10**	**0.73**
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		**0.03**	**0.03**	<0.01	**0.01**	**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		**0.4**	**0.4**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**3.35**	**3.36**	<0.02	**0.03**	**0.20**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.69**	**1.72**	<0.02	**0.05**	**0.48**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.36**	**0.35**	<0.02	<0.02	**0.12**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.07**	**0.07**	<0.01	**0.01**	**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
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	1435_MW002_210416	1435_QC149_210416	1435_QC326_210416	1435_MW011_210416	1435_MW010_210416
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110965-001	EB2110965-002	EB2110965-003	EB2110965-004	EB2110965-005
					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		**0.70**	**0.77**	<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		**7.72**	**7.81**	<0.01	**0.26**	**2.29**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.59**	**0.59**	<0.01	**0.11**	**0.84**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**7.47**	**7.57**	<0.01	**0.23**	**2.02**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**92.5**	**98.5**	**103**	**97.5**	**99.7**
13C8-PFOA	----	0.02	%		**96.9**	**97.0**	**96.7**	**95.9**	**96.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1435_MW004_210416	1435_MW006_210416	1435_MW009_210416	1435_MW003_210416	1435_MW007_210416
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110965-006	EB2110965-007	EB2110965-008	EB2110965-009	EB2110965-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.92**	**1.98**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**1.16**	**2.49**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	<0.02	**4.99**	**8.89**	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.31**	**0.35**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**4.35**	**4.08**	**0.02**
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	**0.2**	**0.5**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.83**	**1.67**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**1.79**	**4.38**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**0.44**	**1.10**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.64**	**1.33**	<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	1435_MW004_210416	1435_MW006_210416	1435_MW009_210416	1435_MW003_210416	1435_MW007_210416
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110965-006	EB2110965-007	EB2110965-008	EB2110965-009	EB2110965-010
					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		**0.06**	<0.05	**0.08**	**0.16**	**0.08**
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		**0.06**	<0.01	**15.7**	**26.9**	**0.10**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**9.34**	**13.0**	**0.02**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.06**	<0.01	**14.2**	**24.1**	**0.10**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.7**	**100**	**98.4**	**102**	**110**
13C8-PFOA	----	0.02	%		**95.6**	**95.3**	**98.0**	**96.6**	**96.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1435_MW008_210416	1435_MW013_210416	----	----	----
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2110965-011	EB2110965-012	--------	--------	--------
					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	0.02	µg/L		<0.02	<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		<0.01	<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	----	----	----
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	1435_MW008_210416	1435_MW013_210416	----	----	----
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2110965-011	EB2110965-012	--------	--------	--------
					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		<0.01	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**98.5**	----	----	----
13C8-PFOA	----	0.02	%		**93.7**	**96.5**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110965**	Page	: 1 of 6
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_1435_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 12		
No. of samples analysed	: 12		

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]	[redacted]	Brisbane Organics, Stafford, QLD
	[redacted]	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

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: 3643051)									
EB2110965-004	1435_MW011_210416	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.01	0.02	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.10	0.09	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643051)									
EB2110965-004	1435_MW011_210416	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643051)									
EB2110965-004	1435_MW011_210416	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	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: 3643051) - continued									
EB2110965-004	1435_MW011_210416	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643051)									
EB2110965-004	1435_MW011_210416	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3643051)									
EB2110965-004	1435_MW011_210416	EP231X: Sum of PFAS	----	0.01	µg/L	0.26	0.24	8.00	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.11	0.11	0.00	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.23	0.22	4.44	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: **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: 3643051)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.7	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	101	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	84.9	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	100	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	107	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	82.6	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643051)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	78.1	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	95.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	90.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	88.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	85.2	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	86.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	91.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643051)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	80.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	82.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	83.4	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	93.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	93.7	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	90.6	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	91.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643051)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	91.1	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	105	67.0	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643051) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	88.8	64.2	133
EP231P: PFAS Sums (QCLot: 3643051)								
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: 3643051)							
EB2110965-005	1435_MW010_210416	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	74.9	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	85.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	98.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	111	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	92.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643051)							
EB2110965-005	1435_MW010_210416	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	75.3	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	95.4	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	79.1	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	88.5	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	94.7	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	88.7	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	90.0	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	82.8	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	94.0	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	91.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643051)							
EB2110965-005	1435_MW010_210416	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	66.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	77.6	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643051) - continued							
EB2110965-005	1435_MW010_210416	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	75.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	81.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	91.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	96.2	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	79.9	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643051)							
EB2110965-005	1435_MW010_210416	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	88.5	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	102	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	92.1	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	130	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110965**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_1435_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 30-Apr-2021
Sampler	: [redacted]	No. of samples received	: 12
Order number	: 60612563 2.1	No. of samples analysed	: 12

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							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2110965--005	1435_MW010_210416	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	16	6.25	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)								
1435_MW002_210416,	1435_QC149_210416,	**16-Apr-2021**	**28-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	13-Oct-2021	✓
1435_QC326_210416,	1435_MW011_210416,							
1435_MW010_210416,	1435_MW004_210416,							
1435_MW006_210416,	1435_MW009_210416,							
1435_MW003_210416,	1435_MW007_210416,							
1435_MW008_210416,	1435_MW013_210416							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
1435_MW002_210416,	1435_QC149_210416,	**16-Apr-2021**	**28-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	13-Oct-2021	✓
1435_QC326_210416,	1435_MW011_210416,							
1435_MW010_210416,	1435_MW004_210416,							
1435_MW006_210416,	1435_MW009_210416,							
1435_MW003_210416,	1435_MW007_210416,							
1435_MW008_210416,	1435_MW013_210416							

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)							
1435_MW002_210416, 1435_QC149_210416, 1435_QC326_210416, 1435_MW011_210416, 1435_MW010_210416, 1435_MW004_210416, 1435_MW006_210416, 1435_MW009_210416, 1435_MW003_210416, 1435_MW007_210416, 1435_MW008_210416, 1435_MW013_210416	**16-Apr-2021**	**28-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	13-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
1435_MW002_210416, 1435_QC149_210416, 1435_QC326_210416, 1435_MW011_210416, 1435_MW010_210416, 1435_MW004_210416, 1435_MW006_210416, 1435_MW009_210416, 1435_MW003_210416, 1435_MW007_210416, 1435_MW008_210416, 1435_MW013_210416	**16-Apr-2021**	**28-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	13-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
1435_MW002_210416, 1435_QC149_210416, 1435_QC326_210416, 1435_MW011_210416, 1435_MW010_210416, 1435_MW004_210416, 1435_MW006_210416, 1435_MW009_210416, 1435_MW003_210416, 1435_MW007_210416, 1435_MW008_210416, 1435_MW013_210416	**16-Apr-2021**	**28-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	13-Oct-2021	✓

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	16	**6.25**	**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	1	16	**6.25**	**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 : **EB2110967**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 5
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2021 13:40	Issue Date	: 22-Apr-2021
Client Requested Due Date	: 30-Apr-2021	Scheduled Reporting Date	: **30-Apr-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 2.7<->4.2°C - Ice present
Receipt Detail	: MEDIUM ESKIES	No. of samples received / analysed	: 93 / 91

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
- **Please be advised, samples MW134 and MW229 were received in addition to the listed COC samples. All extra samples have been added to the end of the workorder and placed on hold.**
- 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.**
- **Various samples has been forwarded to NMI , 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.

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)
EB2110967-002	12-Apr-2021 00:00	0207_SED007_210412	✓	✓
EB2110967-005	12-Apr-2021 00:00	0207_SED040_210412	✓	✓
EB2110967-009	13-Apr-2021 00:00	0207_SED038_210413	✓	✓
EB2110967-011	13-Apr-2021 00:00	0207_SED013_210413	✓	✓
EB2110967-013	13-Apr-2021 00:00	0207_SED102_210413	✓	✓
EB2110967-015	13-Apr-2021 00:00	0207_SED105_210413	✓	✓
EB2110967-017	13-Apr-2021 00:00	0207_SED036_210413	✓	✓
EB2110967-019	13-Apr-2021 00:00	0207_SED037_210413	✓	✓
EB2110967-043	15-Apr-2021 00:00	0207_SED070_210415	✓	✓
EB2110967-071	12-Apr-2021 00:00	0207_QC139_210412	✓	✓
EB2110967-073	12-Apr-2021 00:00	0207_QC141_210412	✓	✓
EB2110967-077	13-Apr-2021 00:00	0207_QC144_210413	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2110967-001	12-Apr-2021 00:00	0207_SW043_210412		✓
EB2110967-003	12-Apr-2021 00:00	0207_MW265_210412		✓
EB2110967-004	12-Apr-2021 00:00	0207_SW040_210412		✓
EB2110967-006	13-Apr-2021 00:00	0207_MW255_210413		✓
EB2110967-007	13-Apr-2021 00:00	0207_MW264_210413		✓
EB2110967-008	13-Apr-2021 00:00	0207_SW004_210413		✓
EB2110967-010	13-Apr-2021 00:00	0207_SW009_210413		✓
EB2110967-012	13-Apr-2021 00:00	0207_SW013_210413		✓
EB2110967-014	13-Apr-2021 00:00	0207_SW012_210413		✓
EB2110967-016	13-Apr-2021 00:00	0207_SW011_210413		✓
EB2110967-018	13-Apr-2021 00:00	0207_SW010_210413		✓

			(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2110967-020	14-Apr-2021 00:00	0207_MW173_210414		✓
EB2110967-021	14-Apr-2021 00:00	0207_QC324_210414		✓
EB2110967-022	14-Apr-2021 00:00	0207_MW172_210414		✓
EB2110967-023	14-Apr-2021 00:00	0207_MW254_210414		✓
EB2110967-024	14-Apr-2021 00:00	0207_MW253_210414		✓
EB2110967-025	14-Apr-2021 00:00	0207_MW249_210414		✓
EB2110967-026	14-Apr-2021 00:00	0207_MW241_210414		✓
EB2110967-027	14-Apr-2021 00:00	0207_MW235_210414		✓
EB2110967-028	14-Apr-2021 00:00	0207_MW236_210414		✓
EB2110967-029	14-Apr-2021 00:00	0207_MW252_210414		✓
EB2110967-030	14-Apr-2021 00:00	0207_MW232_210414		✓
EB2110967-031	14-Apr-2021 00:00	0207_MW230_210414		✓
EB2110967-032	14-Apr-2021 00:00	0207_MW223_210414		✓
EB2110967-033	14-Apr-2021 00:00	0207_MW222_210414		✓
EB2110967-034	14-Apr-2021 00:00	0207_MW198_210414		✓
EB2110967-035	14-Apr-2021 00:00	0207_MW206_210414		✓
EB2110967-036	14-Apr-2021 00:00	0207_MW221_210414		✓
EB2110967-037	14-Apr-2021 00:00	0207_MW193_210414		✓
EB2110967-038	14-Apr-2021 00:00	0207_MW174_210414		✓
EB2110967-039	15-Apr-2021 00:00	0207_MW282_210415		✓
EB2110967-040	15-Apr-2021 00:00	0207_MW201_210415		✓
EB2110967-041	15-Apr-2021 00:00	0207_MW203_210415		✓
EB2110967-042	15-Apr-2021 00:00	0207_SW028_210415		✓
EB2110967-044	15-Apr-2021 00:00	0207_MW285_210415		✓
EB2110967-045	16-Apr-2021 00:00	0207_MW179_210416		✓
EB2110967-046	16-Apr-2021 00:00	0207_MW298_210416		✓
EB2110967-047	16-Apr-2021 00:00	0207_MW279_210416		✓
EB2110967-048	17-Apr-2021 00:00	0207_MW300_210417		✓
EB2110967-049	17-Apr-2021 00:00	0207_MW299_210417		✓
EB2110967-050	17-Apr-2021 00:00	0207_MW167_210417		✓
EB2110967-051	17-Apr-2021 00:00	0207_MW204_210417		✓
EB2110967-052	17-Apr-2021 00:00	0207_MW205_210417		✓
EB2110967-053	17-Apr-2021 00:00	0207_MW202_210417		✓
EB2110967-054	17-Apr-2021 00:00	0207_MW189_210417		✓
EB2110967-055	17-Apr-2021 00:00	0207_MW187_210417		✓
EB2110967-056	17-Apr-2021 00:00	0207_MW178_210417		✓
EB2110967-057	17-Apr-2021 00:00	0207_MW233_210417		✓
EB2110967-058	17-Apr-2021 00:00	0207_MW257_210417		✓
EB2110967-059	17-Apr-2021 00:00	0207_MW274_210417		✓
EB2110967-060	17-Apr-2021 00:00	0207_MW275_210417		✓
EB2110967-061	17-Apr-2021 00:00	0207_MW280_210417		✓

			(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2110967-062	19-Apr-2021 00:00	0207_MW273_210419		✓
EB2110967-063	19-Apr-2021 00:00	0207_MW272_210419		✓
EB2110967-064	19-Apr-2021 00:00	0207_MW276_210419		✓
EB2110967-065	19-Apr-2021 00:00	0207_MW262_210419		✓
EB2110967-066	20-Apr-2021 00:00	0207_MW245_210420		✓
EB2110967-067	20-Apr-2021 00:00	0207_MW242_210420		✓
EB2110967-068	20-Apr-2021 00:00	0207_MW266_210420		✓
EB2110967-069	12-Apr-2021 00:00	0207_QC322_210412		✓
EB2110967-070	12-Apr-2021 00:00	0207_QC138_210412		✓
EB2110967-072	12-Apr-2021 00:00	0207_QC140_210412		✓
EB2110967-074	13-Apr-2021 00:00	0207_QC142_210413		✓
EB2110967-075	13-Apr-2021 00:00	0207_QC323_210413		✓
EB2110967-076	13-Apr-2021 00:00	0207_QC143_210413		✓
EB2110967-078	14-Apr-2021 00:00	0207_QC145_210414		✓
EB2110967-079	14-Apr-2021 00:00	0207_QC146_210414		✓
EB2110967-080	15-Apr-2021 00:00	0207_QC325_210415		✓
EB2110967-081	15-Apr-2021 00:00	0207_QC147_210415		✓
EB2110967-082	15-Apr-2021 00:00	0207_QC148_210415		✓
EB2110967-083	16-Apr-2021 00:00	0207_QC327_210416		✓
EB2110967-084	16-Apr-2021 00:00	0207_QC150_210416		✓
EB2110967-085	17-Apr-2021 00:00	0207_QC328_210417		✓
EB2110967-086	17-Apr-2021 00:00	0207_QC151_210417		✓
EB2110967-087	19-Apr-2021 00:00	0207_QC329_210419		✓
EB2110967-088	19-Apr-2021 00:00	0207_QC152_210419		✓
EB2110967-089	19-Apr-2021 00:00	0207_QC153_210419		✓
EB2110967-090	19-Apr-2021 00:00	0207_QC154_210419		✓
EB2110967-091	20-Apr-2021 00:00	0207_QC330_210420		✓
EB2110967-092	20-Apr-2021 00:00	0207_MW134_210419	✓	
EB2110967-093	20-Apr-2021 00:00	0207_MW229_210414	✓	

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2110967**	Page	: 1 of 61
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021 13:40
Order number	: 60612563 2.1	Date Analysis Commenced	: 23-Apr-2021
C-O-C number	: ----	Issue Date	: 04-May-2021 16:10
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 92		
No. of samples analysed	: 92		

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]	[redacted]	Brisbane Inorganics, Stafford, QLD
[redacted]	[redacted]	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 Contact 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: The LOR for particular analytes for particular samples have been raised due to matrix interference.
- 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.
- EP231X PFAS and EP231X-INJ PFAS: Particular samples required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly and surrogate recoveries not determined.
- EP231X PFAS: Sample "0207_SD013_210413" required dilution due to sample matrix. LOR values have been adjusted accordingly.
- EP231X-INJ PFAS by LCMSMS: Samples '0207_MW205_210417', '0207_MW187_210417', '0207_MW274_210417', '0207_MW280_210417', '0207_MW266_210417' and '0207_QC145_210414' have been tested to the legacy QSM 5.1 aligned, NATA accredited method due to insufficient sample volume provided for SPE extraction.
- EP231X-INJ PFAS by LCMSMS: Particular samples have been tested to the legacy QSM 5.1 aligned, NATA accredited method due to sample matrix being unsuitable for SPE extraction (high sediment content).
- 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.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_SD007_210412	0207_SD040_210412	0207_SD038_210413	0207_SD013_210413	0207_SD102_210413
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
					EB2110967-002	EB2110967-005	EB2110967-009	EB2110967-011	EB2110967-013
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**29.1**	**27.2**	**14.1**	**48.3**	**32.0**
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	<0.0002	**0.0035**	**0.0009**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0004**	**0.0004**	**0.0016**	**0.0559**	**0.0126**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0014	<0.0002	**0.0032**	**0.0012**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.002	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<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	<0.0005	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	**0.0003**	<0.0005	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0007**	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0017**	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0005

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0207_SD007_210412	0207_SD040_210412	0207_SD038_210413	0207_SD013_210413	0207_SD102_210413
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-002	EB2110967-005	EB2110967-009	EB2110967-011	EB2110967-013
					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	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<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		**0.0004**	**0.0004**	**0.0019**	**0.0664**	**0.0147**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0004**	**0.0004**	**0.0016**	**0.0594**	**0.0135**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0004**	**0.0004**	**0.0016**	**0.0601**	**0.0135**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**95.5**	**98.0**	**122**	**130**	**89.5**
13C8-PFOA	----	0.0002	%		**93.5**	**93.5**	**116**	**80.0**	**93.5**

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_SD105_210413	0207_SD036_210413	0207_SD037_210413	0207_SD070_210415	0207_QC139_210412
				Sampling date / time	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	15-Apr-2021 00:00	12-Apr-2021 00:00
					EB2110967-015	EB2110967-017	EB2110967-019	EB2110967-043	EB2110967-071
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**30.7**	**14.7**	**36.9**	**43.4**	**33.3**
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		**0.0008**	**0.0006**	**0.0010**	<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		**0.0153**	**0.0114**	**0.0078**	<0.0002	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		**0.0004**	**0.0008**	<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**	<0.0002	<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		**0.0016**	**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		**0.0009**	**0.0012**	**0.0002**	**0.0002**	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	**0.0004**	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0006**	**0.0021**	**0.0004**	<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: SEDIMENT (Matrix: SOIL)				Sample ID	0207_SD105_210413	0207_SD036_210413	0207_SD037_210413	0207_SD070_210415	0207_QC139_210412
				Sampling date / time	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	15-Apr-2021 00:00	12-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-015	EB2110967-017	EB2110967-019	EB2110967-043	EB2110967-071
					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		**0.0204**	**0.0169**	**0.0094**	**0.0002**	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0161**	**0.0120**	**0.0088**	<0.0002	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0183**	**0.0122**	**0.0088**	<0.0002	<0.0002
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**102**	**109**	**107**	**100**	**97.5**
13C8-PFOA	----	0.0002	%		**91.5**	**93.0**	**102**	**93.0**	**93.0**

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_QC141_210412	0207_QC144_210413	----	----	----
				Sampling date / time	12-Apr-2021 00:00	13-Apr-2021 00:00	----	----	----
					EB2110967-073	EB2110967-077	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**13.1**	**32.6**	----	----	----
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	**0.0009**	----	----	----
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	**0.0022**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	**0.0014**	----	----	----
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: SEDIMENT (Matrix: SOIL)				Sample ID	0207_QC141_210412	0207_QC144_210413	----	----	----
				Sampling date / time	12-Apr-2021 00:00	13-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2110967-073	EB2110967-077	--------	--------	--------
					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		<0.0002	**0.0045**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	**0.0031**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	**0.0031**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**123**	**124**	----	----	----
13C8-PFOA	----	0.0002	%		**110**	**96.0**	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_SW043_210412	0207_MW265_210412	0207_SW040_210412	0207_MW255_210413	0207_MW264_210413
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
					EB2110967-001	EB2110967-003	EB2110967-004	EB2110967-006	EB2110967-007
					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	0.02	µg/L		<0.02	<0.02	<0.02	**0.11**	<0.02
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	**0.04**	<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	0207_SW043_210412	0207_MW265_210412	0207_SW040_210412	0207_MW255_210413	0207_MW264_210413
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-001	EB2110967-003	EB2110967-004	EB2110967-006	EB2110967-007
					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	**0.17**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.01**	<0.01	<0.01	**0.15**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.01**	<0.01	<0.01	**0.15**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**95.7**	**104**	**101**	**109**	**110**
13C8-PFOA	----	0.02	%		**96.0**	**93.0**	**94.9**	**93.3**	**94.0**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_SW004_210413	0207_SW009_210413	0207_SW013_210413	0207_SW012_210413	0207_SW011_210413
				Sampling date / time	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
					EB2110967-008	EB2110967-010	EB2110967-012	EB2110967-014	EB2110967-016
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.05**	**0.04**	**0.05**	**0.04**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.04**	**0.03**	**0.03**	**0.03**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	**0.27**	**0.18**	**0.21**	**0.15**
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	**0.63**	**0.56**	**0.57**	**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	**0.04**	**0.03**	**0.04**	**0.03**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.08**	**0.07**	**0.08**	**0.06**
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**	**0.02**	**0.02**	**0.02**
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	0207_SW004_210413	0207_SW009_210413	0207_SW013_210413	0207_SW012_210413	0207_SW011_210413
				Sampling date / time	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-008	EB2110967-010	EB2110967-012	EB2110967-014	EB2110967-016
					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	**1.13**	**0.93**	**1.00**	**0.65**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.90**	**0.74**	**0.78**	**0.47**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**1.09**	**0.90**	**0.97**	**0.62**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.1**	**111**	**109**	**101**	**111**
13C8-PFOA	----	0.02	%		**93.8**	**95.8**	**95.7**	**94.5**	**97.0**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_SW010_210413	0207_MW173_210414	0207_QC324_210414	0207_MW172_210414	0207_MW254_210414
				Sampling date / time	13-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
					EB2110967-018	EB2110967-020	EB2110967-021	EB2110967-022	EB2110967-023
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.22**	<0.02	**0.30**	**1.28**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.25**	<0.02	**0.30**	**1.17**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.05**	**2.32**	<0.02	**1.71**	**7.77**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.14**	<0.02	**0.09**	**0.16**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.09**	**2.01**	<0.01	**3.63**	**9.32**
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	**0.3**	<0.1	**0.6**	**0.7**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.96**	<0.02	**1.83**	**0.90**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.93**	<0.02	**1.18**	**2.61**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.50**	<0.02	**1.42**	**0.22**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.01**	**0.46**	<0.01	**0.59**	**0.40**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.11**	<0.02	**0.14**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	**0.08**	<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	**0.08**
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	0207_SW010_210413	0207_MW173_210414	0207_QC324_210414	0207_MW172_210414	0207_MW254_210414
				Sampling date / time	13-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-018	EB2110967-020	EB2110967-021	EB2110967-022	EB2110967-023
					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	**0.23**	<0.05	**0.89**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	**1.53**	<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		**0.15**	**8.43**	<0.01	**14.3**	**24.6**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.14**	**4.33**	<0.01	**5.34**	**17.1**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.15**	**7.93**	<0.01	**13.7**	**23.2**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**122**	**115**	**121**	**111**	**105**
13C8-PFOA	----	0.02	%		**95.7**	**97.3**	**96.5**	**98.1**	**95.6**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW253_210414	0207_MW249_210414	0207_MW241_210414	0207_MW235_210414	0207_MW236_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
					EB2110967-024	EB2110967-025	EB2110967-026	EB2110967-027	EB2110967-028
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	----	----	**3.56**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	----	----	**2.64**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		----	----	----	----	**9.33**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	----	----	----	**0.52**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	----	----	----	**5.08**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	----	----	----	<0.02
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.26**	**0.71**	**0.13**	**6.73**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.66**	**0.94**	**0.16**	**7.34**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**10.4**	**4.04**	**1.44**	**20.1**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.75**	**0.06**	**0.11**	**0.40**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**14.6**	**0.15**	**3.77**	**5.29**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		----	----	----	----	**0.98**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	----	----	**1.09**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	----	----	**4.55**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	----	----	**0.48**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	----	----	**0.75**
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW253_210414	0207_MW249_210414	0207_MW241_210414	0207_MW235_210414	0207_MW236_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-024	EB2110967-025	EB2110967-026	EB2110967-027	EB2110967-028
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	----	----	----	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	----	----	----	<0.05
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.4**	**0.2**	<0.1	**1.8**	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.51**	**0.43**	**0.09**	**2.72**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.88**	**1.41**	**0.21**	**12.8**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.28**	**0.17**	**0.06**	**1.26**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.52**	**0.11**	**0.14**	**1.04**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	----
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
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW253_210414	0207_MW249_210414	0207_MW241_210414	0207_MW235_210414	0207_MW236_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-024	EB2110967-025	EB2110967-026	EB2110967-027	EB2110967-028
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		**0.06**	<0.02	<0.02	<0.04	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.09	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	----
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
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		----	----	----	----	**29.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW253_210414	0207_MW249_210414	0207_MW241_210414	0207_MW235_210414	0207_MW236_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-024	EB2110967-025	EB2110967-026	EB2110967-027	EB2110967-028
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**----**	**----**	**----**	**----**	**14.4**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**----**	**----**	**----**	**----**	**25.8**
Sum of PFAS	----	0.01	µg/L		**32.3**	**8.22**	**6.11**	**59.5**	**----**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**25.0**	**4.19**	**5.21**	**25.4**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**29.8**	**7.22**	**5.84**	**51.7**	**----**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**117**	**102**	**94.1**	**96.0**	**----**
13C4-PFOS	----	0.02	%		**----**	**----**	**----**	**----**	**100**
13C8-PFOA	----	0.02	%		**99.0**	**97.6**	**99.3**	**102**	**----**
13C8-PFOA	----	0.02	%		**----**	**----**	**----**	**----**	**100**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW252_210414	0207_MW232_210414	0207_MW230_210414	0207_MW223_210414	0207_MW222_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
					EB2110967-029	EB2110967-030	EB2110967-031	EB2110967-032	EB2110967-033
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**2.41**	----	----	----	**2.17**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**2.70**	----	----	----	**2.34**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**11.5**	----	----	----	**14.4**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.64**	----	----	----	**1.51**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**17.0**	----	----	----	**23.6**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.10	----	----	----	<0.10
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	**0.33**	**1.11**	**1.22**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	**0.49**	**1.20**	**1.29**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		----	**3.52**	**6.31**	**8.92**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	**0.44**	**0.78**	**0.97**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	**21.2**	**11.0**	**18.6**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	<0.04	<0.04	<0.07	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		**0.83**	----	----	----	**2.27**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.55**	----	----	----	**5.65**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**3.43**	----	----	----	**9.84**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.76**	----	----	----	**4.62**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.97**	----	----	----	**6.37**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.10	----	----	----	**1.33**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.10	----	----	----	<0.10
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.10	----	----	----	<0.10
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.10	----	----	----	<0.10

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW252_210414	0207_MW232_210414	0207_MW230_210414	0207_MW223_210414	0207_MW222_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
					EB2110967-029	EB2110967-030	EB2110967-031	EB2110967-032	EB2110967-033
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.10	----	----	----	<0.10
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.25	----	----	----	<0.25
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	**0.7**	**4.8**	**6.4**	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	**2.34**	**25.3**	**37.4**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	**1.71**	**12.3**	**15.1**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	**1.20**	**7.22**	**10.2**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	**1.42**	**5.87**	**9.72**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	**0.37**	**0.94**	**2.24**	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	**0.42**	<0.04	<0.07	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	<0.04	<0.04	<0.07	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	<0.04	<0.04	<0.07	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	<0.04	<0.04	<0.07	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	<0.10	<0.09	<0.18	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.10	----	----	----	<0.10
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.25	----	----	----	<0.25
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.25	----	----	----	<0.25
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.25	----	----	----	<0.25
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.25	----	----	----	<0.25
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.10	----	----	----	<0.10
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.10	----	----	----	<0.10

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW252_210414	0207_MW232_210414	0207_MW230_210414	0207_MW223_210414	0207_MW222_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-029	EB2110967-030	EB2110967-031	EB2110967-032	EB2110967-033
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	<0.04	<0.04	<0.07	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	<0.10	<0.09	<0.18	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	<0.10	<0.09	<0.18	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	<0.10	<0.09	<0.18	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	<0.10	<0.09	<0.18	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	<0.04	<0.04	<0.07	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	<0.04	<0.04	<0.07	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.10	----	----	----	<0.10
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.10	----	----	----	**3.14**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.10	----	----	----	**0.13**
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.10	----	----	----	<0.10
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	<0.05	<0.05	<0.07	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	**0.24**	**2.93**	**6.65**	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	**2.55**	<0.05	**0.74**	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	<0.05	<0.05	<0.07	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**41.8**	----	----	----	**77.4**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW252_210414	0207_MW232_210414	0207_MW230_210414	0207_MW223_210414	0207_MW222_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-029	EB2110967-030	EB2110967-031	EB2110967-032	EB2110967-033
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**28.5**	----	----	----	**38.0**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**38.4**	----	----	----	**72.2**
Sum of PFAS	----	0.01	µg/L		----	**36.9**	**79.8**	**119**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	**24.7**	**17.3**	**27.5**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	**35.2**	**76.8**	**115**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		----	**114**	**112**	**114**	----
13C4-PFOS	----	0.02	%		**104**	----	----	----	**100**
13C8-PFOA	----	0.02	%		----	**103**	**108**	**104**	----
13C8-PFOA	----	0.02	%		**111**	----	----	----	**108**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW198_210414	0207_MW206_210414	0207_MW221_210414	0207_MW193_210414	0207_MW174_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
					EB2110967-034	EB2110967-035	EB2110967-036	EB2110967-037	EB2110967-038
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.14**	**0.61**	**0.35**	**3.91**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.18**	**0.72**	**0.34**	**4.23**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**1.28**	**4.89**	**1.69**	**17.0**	**0.06**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.18**	**0.37**	**0.12**	**1.84**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**5.40**	**6.07**	**1.71**	**25.9**	**0.05**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.1**	**0.2**	**0.2**	**4.1**	<0.2
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.19**	**0.29**	**0.28**	**2.62**	**0.17**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.43**	**1.11**	**0.92**	**9.92**	<0.11
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.14**	**0.31**	**0.25**	**2.52**	**0.05**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.21**	**0.55**	**0.36**	**3.80**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	**0.04**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.10	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.10	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.10	<0.05

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW198_210414	0207_MW206_210414	0207_MW221_210414	0207_MW193_210414	0207_MW174_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
					EB2110967-034	EB2110967-035	EB2110967-036	EB2110967-037	EB2110967-038
					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	<0.10	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.10	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.04	<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	**0.14**	**0.72**
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		**8.25**	**15.1**	**6.22**	**76.0**	**1.05**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**6.68**	**11.0**	**3.40**	**42.9**	**0.11**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**7.89**	**14.0**	**5.76**	**69.9**	**1.05**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**94.3**	**96.1**	**134**	**106**
13C8-PFOA	----	0.02	%		**102**	**102**	**106**	**104**	**101**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW282_210415	0207_MW201_210415	0207_MW203_210415	0207_SW028_210415	0207_MW285_210415
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00
					EB2110967-039	EB2110967-040	EB2110967-041	EB2110967-042	EB2110967-044
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.08**	**11.2**	**2.25**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.07**	**14.8**	**2.34**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.43**	**67.2**	**11.8**	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**3.88**	**0.72**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.54**	**33.7**	**8.04**	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.04	<0.18	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**1.9**	<0.9	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**3.85**	**0.92**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.02**	**17.3**	**3.66**	<0.03	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**2.57**	**0.63**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.02**	**4.67**	**1.14**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.04	<0.18	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.04	<0.18	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.04	<0.18	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.04	<0.18	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.04	<0.18	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.10	<0.45	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.04	<0.18	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.10	<0.45	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.10	<0.45	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW282_210415	0207_MW201_210415	0207_MW203_210415	0207_SW028_210415	0207_MW285_210415
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00
					EB2110967-039	EB2110967-040	EB2110967-041	EB2110967-042	EB2110967-044
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.10	<0.45	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.10	<0.45	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.04	<0.18	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.04	<0.18	<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	<0.18	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	**0.43**	<0.18	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.18	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.18	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1.16**	**162**	**31.5**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.97**	**101**	**19.8**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.09**	**143**	**28.4**	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.4**	**109**	**120**	**97.7**	**100**
13C8-PFOA	----	0.02	%		**101**	**96.0**	**105**	**99.6**	**98.6**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW179_210416	0207_MW298_210416	0207_MW279_210416	0207_MW300_210417	0207_MW299_210417
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00
					EB2110967-045	EB2110967-046	EB2110967-047	EB2110967-048	EB2110967-049
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.57**	----	----	**9.74**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.51**	----	----	**10.3**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**2.60**	----	----	**47.8**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.26**	----	----	**4.37**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**3.05**	----	----	**59.8**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	<0.10	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	<0.02	<0.02	----	**4.04**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	<0.02	<0.02	----	**4.09**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		----	<0.02	<0.02	----	**13.7**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	<0.02	<0.02	----	**0.61**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	<0.01	<0.01	----	**10.7**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	<0.02	<0.02	----	<0.21
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		**0.33**	----	----	**3.46**	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.30**	----	----	**4.59**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.34**	----	----	**19.1**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.25**	----	----	**4.29**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.35**	----	----	**8.36**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	<0.10	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	<0.10	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	<0.10	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	<0.10	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW179_210416	0207_MW298_210416	0207_MW279_210416	0207_MW300_210417	0207_MW299_210417
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00
					EB2110967-045	EB2110967-046	EB2110967-047	EB2110967-048	EB2110967-049
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	<0.10	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	<0.25	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	<0.1	<0.1	----	**1.5**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	<0.02	<0.02	----	**2.08**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	<0.02	<0.02	----	**8.36**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	<0.02	<0.02	----	**1.73**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	<0.01	<0.01	----	**2.38**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	<0.02	<0.02	----	<0.21
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	<0.02	<0.02	----	<0.21
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	<0.02	<0.02	----	<0.21
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	<0.02	<0.02	----	<0.21
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	<0.02	<0.02	----	<0.21
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	<0.05	<0.05	----	<0.53
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	<0.10	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	<0.25	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	<0.25	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	<0.25	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	<0.25	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	<0.10	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	<0.10	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW179_210416	0207_MW298_210416	0207_MW279_210416	0207_MW300_210417	0207_MW299_210417
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-045	EB2110967-046	EB2110967-047	EB2110967-048	EB2110967-049
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	<0.02	<0.02	----	<0.21
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	<0.05	<0.05	----	<0.53
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	<0.05	<0.05	----	<0.53
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	<0.05	<0.05	----	<0.53
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	<0.05	<0.05	----	<0.53
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	<0.02	<0.02	----	<0.21
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	<0.02	<0.02	----	<0.21
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	<0.10	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	**0.16**	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	<0.10	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	<0.10	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	<0.05	<0.05	----	<0.21
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	<0.05	<0.05	----	<0.21
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	<0.05	<0.05	----	<0.21
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	<0.05	<0.05	----	<0.21
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**9.56**	----	----	**172**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW179_210416	0207_MW298_210416	0207_MW279_210416	0207_MW300_210417	0207_MW299_210417
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-045	EB2110967-046	EB2110967-047	EB2110967-048	EB2110967-049
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**5.65**	**----**	**----**	**108**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**8.79**	**----**	**----**	**157**	**----**
Sum of PFAS	----	0.01	µg/L		**----**	<0.01	<0.01	**----**	**49.2**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**----**	<0.01	<0.01	**----**	**24.4**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**----**	<0.01	<0.01	**----**	**44.5**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**----**	**77.4**	**91.2**	**----**	**130**
13C4-PFOS	----	0.02	%		**94.1**	**----**	**----**	**101**	**----**
13C8-PFOA	----	0.02	%		**----**	**74.1**	**79.0**	**----**	**105**
13C8-PFOA	----	0.02	%		**93.9**	**----**	**----**	**104**	**----**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW167_210417	0207_MW204_210417	0207_MW205_210417	0207_MW202_210417	0207_MW189_210417
				Sampling date / time	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00
					EB2110967-050	EB2110967-051	EB2110967-052	EB2110967-053	EB2110967-054
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.62**	----	**1.39**	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.54**	----	**1.50**	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**2.73**	----	**8.60**	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.26**	----	**0.50**	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**5.50**	----	**5.58**	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	<0.02	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	**14.2**	----	**9.42**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	**15.6**	----	**10.2**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		----	**94.1**	----	**85.2**	**0.08**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	**3.77**	----	**7.07**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	**13.2**	----	**301**	**0.12**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	<0.38	----	<0.37	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		**0.22**	----	**0.33**	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.29**	----	**0.53**	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.22**	----	**2.28**	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.22**	----	**0.43**	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.36**	----	**0.65**	----	----
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	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW167_210417	0207_MW204_210417	0207_MW205_210417	0207_MW202_210417	0207_MW189_210417
				Sampling date / time	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00
					EB2110967-050	EB2110967-051	EB2110967-052	EB2110967-053	EB2110967-054
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
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	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	**3.0**	----	**2.5**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	**4.34**	----	**4.47**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	**20.5**	----	**17.2**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	**3.43**	----	**2.71**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	**5.90**	----	**7.51**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	<0.38	----	<0.37	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	<0.38	----	<0.37	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	<0.38	----	<0.37	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	<0.38	----	<0.37	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	<0.38	----	<0.37	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	<0.95	----	<0.92	<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	----	----
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	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW167_210417	0207_MW204_210417	0207_MW205_210417	0207_MW202_210417	0207_MW189_210417
				Sampling date / time	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-050	EB2110967-051	EB2110967-052	EB2110967-053	EB2110967-054
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	<0.38	----	**0.55**	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	<0.95	----	<0.92	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	<0.95	----	<0.92	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	<0.95	----	<0.92	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	<0.95	----	<0.92	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	<0.38	----	<0.37	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	<0.38	----	<0.37	<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	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	<0.38	----	<0.37	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	<0.38	----	**0.95**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	<0.38	----	<0.37	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	<0.38	----	<0.37	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**12.0**	----	**21.8**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW167_210417	0207_MW204_210417	0207_MW205_210417	0207_MW202_210417	0207_MW189_210417
				Sampling date / time	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-050	EB2110967-051	EB2110967-052	EB2110967-053	EB2110967-054
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**8.23**	**----**	**14.2**	**----**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**11.2**	**----**	**19.8**	**----**	**----**
Sum of PFAS	----	0.01	µg/L		**----**	**178**	**----**	**449**	**0.20**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**----**	**107**	**----**	**386**	**0.20**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**----**	**159**	**----**	**431**	**0.20**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**----**	**Not Determined**	**----**	**Not Determined**	**100**
13C4-PFOS	----	0.02	%		**92.0**	**----**	**107**	**----**	**----**
13C8-PFOA	----	0.02	%		**----**	**Not Determined**	**----**	**Not Determined**	**98.2**
13C8-PFOA	----	0.02	%		**94.5**	**----**	**117**	**----**	**----**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW187_210417	0207_MW178_210417	0207_MW233_210417	0207_MW257_210417	0207_MW274_210417
				Sampling date / time	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00
					EB2110967-055	EB2110967-056	EB2110967-057	EB2110967-058	EB2110967-059
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.09**	----	**0.21**	----	**0.07**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.08**	----	**0.17**	----	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.58**	----	**0.96**	----	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.03**	----	**0.03**	----	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.31**	----	**0.54**	----	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	<0.02	----	<0.02
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	0.02	µg/L		----	<0.02	----	**0.09**	----
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	----	**0.08**	----
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	0.10	µg/L		<0.10	----	<0.10	----	<0.10
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.03**	----	**0.06**	----	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.10**	----	**0.21**	----	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	**0.04**	----	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.03**	----	**0.07**	----	<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

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW187_210417	0207_MW178_210417	0207_MW233_210417	0207_MW257_210417	0207_MW274_210417
				Sampling date / time	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00
					EB2110967-055	EB2110967-056	EB2110967-057	EB2110967-058	EB2110967-059
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
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
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	----	<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
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW187_210417	0207_MW178_210417	0207_MW233_210417	0207_MW257_210417	0207_MW274_210417
				Sampling date / time	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-055	EB2110967-056	EB2110967-057	EB2110967-058	EB2110967-059
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
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	----
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	----	<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
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		**1.25**	----	**2.29**	----	**0.07**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW187_210417	0207_MW178_210417	0207_MW233_210417	0207_MW257_210417	0207_MW274_210417
				Sampling date / time	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-055	EB2110967-056	EB2110967-057	EB2110967-058	EB2110967-059
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.89**	----	**1.50**	----	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.14**	----	**2.09**	----	**0.07**
Sum of PFAS	----	0.01	µg/L		----	<0.01	----	**0.17**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	<0.01	----	**0.17**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	<0.01	----	**0.17**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		----	**98.1**	----	**95.9**	----
13C4-PFOS	----	0.02	%		**92.9**	----	**95.1**	----	**89.8**
13C8-PFOA	----	0.02	%		----	**81.9**	----	**83.4**	----
13C8-PFOA	----	0.02	%		**98.1**	----	**105**	----	**95.0**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW275_210417	0207_MW280_210417	0207_MW273_210419	0207_MW272_210419	0207_MW276_210419
				Sampling date / time	17-Apr-2021 00:00	17-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00
					EB2110967-060	EB2110967-061	EB2110967-062	EB2110967-063	EB2110967-064
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.04**	----	**0.08**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.02**	----	**0.08**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	**0.16**	----	**0.42**	----
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	**0.09**	----	**0.16**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	<0.02	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	<0.02	----	**0.83**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	<0.02	----	**1.17**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		----	----	<0.02	----	**8.05**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	----	<0.02	----	**0.66**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	----	<0.01	----	**11.5**
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	0.10	µg/L		<0.10	<0.10	----	<0.10	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	**0.03**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	**0.12**	----
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	----	**0.02**	----
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	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW275_210417	0207_MW280_210417	0207_MW273_210419	0207_MW272_210419	0207_MW276_210419
				Sampling date / time	17-Apr-2021 00:00	17-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00
					EB2110967-060	EB2110967-061	EB2110967-062	EB2110967-063	EB2110967-064
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
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	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	----	<0.1	----	**0.3**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	<0.02	----	**0.35**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	<0.02	----	**1.57**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	<0.02	----	**0.26**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	<0.01	----	**0.57**
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	----	<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	----
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	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW275_210417	0207_MW280_210417	0207_MW273_210419	0207_MW272_210419	0207_MW276_210419
				Sampling date / time	17-Apr-2021 00:00	17-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-060	EB2110967-061	EB2110967-062	EB2110967-063	EB2110967-064
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
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
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	----	<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	----
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		<0.01	**0.31**	----	**0.91**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW275_210417	0207_MW280_210417	0207_MW273_210419	0207_MW272_210419	0207_MW276_210419
				Sampling date / time	17-Apr-2021 00:00	17-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-060	EB2110967-061	EB2110967-062	EB2110967-063	EB2110967-064
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.25**	----	**0.58**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.29**	----	**0.83**	----
Sum of PFAS	----	0.01	µg/L		----	----	<0.01	----	**25.3**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	----	<0.01	----	**19.6**
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	----	<0.01	----	**23.4**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		----	----	**97.2**	----	**103**
13C4-PFOS	----	0.02	%		**85.0**	**98.5**	----	**89.7**	----
13C8-PFOA	----	0.02	%		----	----	**81.0**	----	**98.1**
13C8-PFOA	----	0.02	%		**96.2**	**100**	----	**92.1**	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW262_210419	0207_MW245_210420	0207_MW242_210420	0207_MW266_210420	0207_QC322_210412
				Sampling date / time	19-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	12-Apr-2021 00:00
					EB2110967-065	EB2110967-066	EB2110967-067	EB2110967-068	EB2110967-069
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	----	**0.78**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	----	**0.69**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		----	----	----	**3.38**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	----	----	**0.22**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	----	----	**3.19**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	----	----	<0.02	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.05**	**0.03**	**0.07**	----	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.04**	**0.04**	**0.08**	----	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.24**	**0.20**	**0.47**	----	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.02**	<0.02	**0.03**	----	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.26**	**0.12**	**0.70**	----	<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	0.10	µg/L		----	----	----	**0.24**	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	----	**0.32**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	----	**1.28**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	----	**0.23**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	----	**0.34**	----
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	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW262_210419	0207_MW245_210420	0207_MW242_210420	0207_MW266_210420	0207_QC322_210412
				Sampling date / time	19-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	12-Apr-2021 00:00
					EB2110967-065	EB2110967-066	EB2110967-067	EB2110967-068	EB2110967-069
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	----	----	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	----	----	<0.05	----
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	**0.04**	----	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.04**	**0.06**	**0.12**	----	<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		**0.03**	**0.01**	**0.04**	----	<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	----
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	----
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	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW262_210419	0207_MW245_210420	0207_MW242_210420	0207_MW266_210420	0207_QC322_210412
				Sampling date / time	19-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	12-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-065	EB2110967-066	EB2110967-067	EB2110967-068	EB2110967-069
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
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
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	----
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	----
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		----	----	----	**10.7**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW262_210419	0207_MW245_210420	0207_MW242_210420	0207_MW266_210420	0207_QC322_210412
				Sampling date / time	19-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	12-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-065	EB2110967-066	EB2110967-067	EB2110967-068	EB2110967-069
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**----**	**----**	**----**	**6.57**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**----**	**----**	**----**	**9.76**	**----**
Sum of PFAS	----	0.01	µg/L		**0.68**	**0.46**	**1.57**	**----**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.50**	**0.32**	**1.17**	**----**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.62**	**0.42**	**1.46**	**----**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.5**	**94.7**	**96.5**	**----**	**99.9**
13C4-PFOS	----	0.02	%		**----**	**----**	**----**	**116**	**----**
13C8-PFOA	----	0.02	%		**97.5**	**96.1**	**95.0**	**----**	**95.3**
13C8-PFOA	----	0.02	%		**----**	**----**	**----**	**106**	**----**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_QC138_210412	0207_QC140_210412	0207_QC142_210413	0207_QC323_210413	0207_QC143_210413
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
					EB2110967-070	EB2110967-072	EB2110967-074	EB2110967-075	EB2110967-076
					Result	Result	Result	Result	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	0.02	µg/L		<0.02	----	----	----	----
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	----	----	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	<0.02	<0.02	<0.02	**0.04**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	<0.02	**0.02**	<0.02	**0.03**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		----	<0.02	**0.10**	<0.02	**0.17**
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	**0.04**	<0.01	**0.55**
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	0.10	µg/L		<0.10	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC138_210412	0207_QC140_210412	0207_QC142_210413	0207_QC323_210413	0207_QC143_210413
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-070	EB2110967-072	EB2110967-074	EB2110967-075	EB2110967-076
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
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	**0.03**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	<0.02	<0.02	<0.02	**0.07**
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	**0.02**
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	----	----	----	----
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	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC138_210412	0207_QC140_210412	0207_QC142_210413	0207_QC323_210413	0207_QC143_210413
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-070	EB2110967-072	EB2110967-074	EB2110967-075	EB2110967-076
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
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
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	----	----	----	----
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	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_QC138_210412	0207_QC140_210412	0207_QC142_210413	0207_QC323_210413	0207_QC143_210413
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
					EB2110967-070	EB2110967-072	EB2110967-074	EB2110967-075	EB2110967-076
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
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	----	----	----	----
Sum of PFAS	----	0.01	µg/L		----	<0.01	**0.16**	<0.01	**0.91**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	<0.01	**0.14**	<0.01	**0.72**
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	<0.01	**0.14**	<0.01	**0.88**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		----	**93.4**	**84.0**	**93.6**	**93.0**
13C4-PFOS	----	0.02	%		**96.5**	----	----	----	----
13C8-PFOA	----	0.02	%		----	**94.3**	**91.7**	**92.2**	**91.7**
13C8-PFOA	----	0.02	%		**96.3**	----	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_QC145_210414	0207_QC146_210414	0207_QC325_210415	0207_QC147_210415	0207_QC148_210415
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00
					EB2110967-078	EB2110967-079	EB2110967-080	EB2110967-081	EB2110967-082
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.45**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.33**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**1.77**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.10**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**2.79**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	**1.02**	<0.02	**0.07**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	**1.01**	<0.02	**0.06**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		----	**5.45**	<0.02	**0.37**	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	**0.60**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	**8.40**	<0.01	**0.49**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	<0.04	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		**0.56**	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**2.02**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.37**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**1.54**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.72**	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.13**	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		**0.07**	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC145_210414	0207_QC146_210414	0207_QC325_210415	0207_QC147_210415	0207_QC148_210415
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-078	EB2110967-079	EB2110967-080	EB2110967-081	EB2110967-082
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	**5.1**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	**25.2**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	**12.8**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	**6.82**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	**5.96**	<0.01	**0.02**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	**0.86**	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	<0.04	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	<0.04	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	<0.04	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	<0.04	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	<0.09	<0.05	<0.05	<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	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC145_210414	0207_QC146_210414	0207_QC325_210415	0207_QC147_210415	0207_QC148_210415
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-078	EB2110967-079	EB2110967-080	EB2110967-081	EB2110967-082
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	<0.04	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	<0.09	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	<0.09	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	<0.09	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	<0.09	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	<0.04	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	<0.04	<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	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.86**	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		**0.86**	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
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		----	**2.76**	<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		**13.6**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC145_210414	0207_QC146_210414	0207_QC325_210415	0207_QC147_210415	0207_QC148_210415
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-078	EB2110967-079	EB2110967-080	EB2110967-081	EB2110967-082
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**4.56**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**12.9**	----	----	----	----
Sum of PFAS	----	0.01	µg/L		----	**76.0**	<0.01	**1.01**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	**13.8**	<0.01	**0.86**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	**73.5**	<0.01	**0.95**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		----	**97.0**	**95.5**	**101**	**102**
13C4-PFOS	----	0.02	%		**95.9**	----	----	----	----
13C8-PFOA	----	0.02	%		----	**99.0**	**92.5**	**94.1**	**94.7**
13C8-PFOA	----	0.02	%		**102**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC327_210416	0207_QC150_210416	0207_QC328_210417	0207_QC151_210417	0207_QC329_210419
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-083	EB2110967-084	EB2110967-085	EB2110967-086	EB2110967-087
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	**0.58**	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	**0.52**	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		----	**2.67**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	**0.25**	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	**3.21**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	<0.02	----	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	<0.02	**8.93**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	<0.02	**9.83**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	----	<0.02	**42.4**	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	<0.02	**4.00**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	<0.01	**63.3**	<0.02
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	<0.02	<0.08	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		----	**0.23**	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	**0.32**	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	**1.44**	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	**0.27**	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	**0.40**	----	----	----
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	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC327_210416	0207_QC150_210416	0207_QC328_210417	0207_QC151_210417	0207_QC329_210419
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-083	EB2110967-084	EB2110967-085	EB2110967-086	EB2110967-087
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	<0.05	----	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	<0.1	**3.0**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	<0.02	**4.42**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	<0.02	**18.4**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	<0.02	**4.12**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	<0.01	**8.83**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	<0.02	<0.08	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	<0.02	<0.08	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	<0.02	<0.08	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	<0.02	<0.08	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	<0.02	<0.08	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	<0.05	<0.21	<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	----	----	----
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	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC327_210416	0207_QC150_210416	0207_QC328_210417	0207_QC151_210417	0207_QC329_210419
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-083	EB2110967-084	EB2110967-085	EB2110967-086	EB2110967-087
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	<0.02	<0.08	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	<0.05	<0.21	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	<0.05	<0.21	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	<0.05	<0.21	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	<0.05	<0.21	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	<0.02	<0.08	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	<0.02	<0.08	<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	----	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	<0.05	<0.08	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	<0.05	**0.12**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	<0.05	<0.08	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	<0.05	<0.08	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		----	**9.89**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC327_210416	0207_QC150_210416	0207_QC328_210417	0207_QC151_210417	0207_QC329_210419
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	17-Apr-2021 00:00	17-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-083	EB2110967-084	EB2110967-085	EB2110967-086	EB2110967-087
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**----**	**5.88**	**----**	**----**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**----**	**9.12**	**----**	**----**	**----**
Sum of PFAS	----	0.01	µg/L		<0.01	**----**	<0.01	**167**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**----**	<0.01	**106**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**----**	<0.01	**154**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.4**	**----**	**96.0**	**110**	**90.0**
13C4-PFOS	----	0.02	%		**----**	**106**	**----**	**----**	**----**
13C8-PFOA	----	0.02	%		**94.0**	**----**	**94.1**	**100**	**87.2**
13C8-PFOA	----	0.02	%		**----**	**96.0**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0207_QC152_210419	0207_QC153_210419	0207_QC154_210419	0207_QC330_210420	0207_MW229_210414
				Sampling date / time	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00
					EB2110967-088	EB2110967-089	EB2110967-090	EB2110967-091	EB2110967-093
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**1.01**	**0.05**	<0.02	**0.77**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**1.33**	**0.04**	<0.02	**1.00**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	**9.08**	**0.25**	<0.02	**7.48**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.63**	<0.02	<0.02	**0.59**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**13.5**	**0.28**	<0.01	**32.3**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.05	<0.02	<0.02	<0.05
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.4**	<0.1	<0.1	<0.3
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.41**	<0.02	<0.02	**0.32**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**1.91**	**0.04**	<0.02	**1.82**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.30**	<0.02	<0.02	**0.17**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.66**	**0.02**	<0.01	**0.54**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.05	<0.02	<0.02	<0.05
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.05	<0.02	<0.02	<0.05
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.05	<0.02	<0.02	<0.05
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.05	<0.02	<0.02	<0.05
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.05	<0.02	<0.02	<0.05
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.12	<0.05	<0.05	<0.13
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.05	<0.02	<0.02	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.12	<0.05	<0.05	<0.13
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.12	<0.05	<0.05	<0.13

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC152_210419	0207_QC153_210419	0207_QC154_210419	0207_QC330_210420	0207_MW229_210414
				Sampling date / time	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2110967-088	EB2110967-089	EB2110967-090	EB2110967-091	EB2110967-093
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.12	<0.05	<0.05	<0.13
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.12	<0.05	<0.05	<0.13
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.05	<0.02	<0.02	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.05	<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	**0.07**
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	**29.2**	**0.68**	<0.01	**45.1**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**22.6**	**0.53**	<0.01	**39.8**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**27.3**	**0.64**	<0.01	**43.5**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**111**	**101**	**106**	**96.2**	**103**
13C8-PFOA	----	0.02	%		**85.7**	**96.0**	**87.5**	**85.9**	**97.0**

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

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2110967**	Page	: 1 of 25
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 23-Apr-2021
C-O-C number	: ----	Issue Date	: 04-May-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 92		
No. of samples analysed	: 92		

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]	[redacted]	Brisbane Inorganics, Stafford, QLD
[redacted]	[redacted]	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

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: 3637969)									
EB2110947-004	Anonymous	EA055: Moisture Content	----	0.1	%	30.4	31.4	3.26	0% - 20%
EB2110967-017	0207_SD036_210413	EA055: Moisture Content	----	0.1	%	14.7	15.2	3.23	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3637967)									
EB2110947-004	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0002	0.0002	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EB2110967-017	0207_SD036_210413	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0006	0.0007	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0114	0.0108	5.88	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0008	0.0008	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3637967)									
EB2110947-004	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	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: 3637967) - continued									
EB2110947-004	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EB2110967-017	0207_SD036_210413	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0002	0.0003	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0012	0.0013	11.1	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0004	0.0004	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0021	0.0026	24.0	0% - 50%
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0002	0.0003	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.0006	19.3	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3637967)									
EB2110947-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2110967-017	0207_SD036_210413	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	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: 3637967)									
EB2110947-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2110967-017	0207_SD036_210413	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	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: 3643052)									
EB2110967-001	0207_SW043_210412	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2110967-020	0207_MW173_210414	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	2.01	1.92	4.56	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.22	0.22	0.00	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.25	0.26	0.00	0% - 50%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	2.32	2.29	1.57	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.14	0.14	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3643066)									
EB2110967-032	0207_MW223_210414	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	18.6	17.9	3.86	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	1.22	1.30	6.22	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	1.29	1.39	7.58	0% - 50%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	8.92	8.82	1.16	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.97	0.88	9.84	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.07	<0.08	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3643067)									
EB2110967-047	0207_MW279_210416	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	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: 3643067) - continued									
EB2110967-047	0207_MW279_210416	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2110967-062	0207_MW273_210419	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3643072)									
EB2110967-093	0207_MW229_210414	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	32.3	30.8	4.80	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.77	0.78	1.59	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	1.00	0.95	4.52	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	7.48	6.87	8.46	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.59	0.59	0.00	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.05	<0.04	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3649801)									
EB2110967-028	0207_MW236_210414	EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	5.08	4.94	2.83	0% - 20%
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	3.56	3.60	1.09	0% - 20%
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	2.64	2.58	2.03	0% - 20%
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	9.33	9.59	2.76	0% - 20%
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.52	0.52	0.00	0% - 20%
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2110967-060	0207_MW275_210417	EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	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: 3649801) - continued									
EB2110967-060	0207_MW275_210417	EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643052)									
EB2110967-001	0207_SW043_210412	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EB2110967-020	0207_MW173_210414	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.46	0.44	4.04	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.96	0.94	2.02	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.93	0.93	0.00	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.50	0.49	0.00	0% - 20%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.11	0.11	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.3	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643066)									
EB2110967-032	0207_MW223_210414	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	9.72	9.88	1.61	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	37.4	38.7	3.40	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	15.1	15.3	1.75	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	10.2	10.3	0.657	0% - 20%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	2.24	2.19	2.26	0% - 20%
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.07	<0.08	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.07	<0.08	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.07	<0.08	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.07	<0.08	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.18	<0.19	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	6.4	6.6	3.07	0% - 50%
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643067)									
EB2110967-047	0207_MW279_210416	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	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: 3643067) - continued									
EB2110967-047	0207_MW279_210416	EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EB2110967-062	0207_MW273_210419	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643072)									
EB2110967-093	0207_MW229_210414	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.54	0.57	4.35	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.32	0.33	4.25	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.82	1.82	0.00	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.17	0.16	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.05	<0.04	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.05	<0.04	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.05	<0.04	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.05	<0.04	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.05	<0.04	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.13	<0.11	16.4	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.3	<0.2	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3649801)									
EB2110967-028	0207_MW236_210414	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.75	0.84	10.6	0% - 20%
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	1.09	1.12	2.88	0% - 20%
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	4.55	4.42	2.85	0% - 20%
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.48	0.46	2.13	0% - 20%
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	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 (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3649801) - continued									
EB2110967-028	0207_MW236_210414	EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.98	0.99	0.00	No Limit
EB2110967-060	0207_MW275_210417	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	<0.10	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643052)									
EB2110967-001	0207_SW043_210412	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110967-020	0207_MW173_210414	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	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: 3643052) - continued									
EB2110967-020	0207_MW173_210414	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643066)									
EB2110967-032	0207_MW223_210414	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.07	<0.08	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.07	<0.08	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.07	<0.08	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.18	<0.19	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.18	<0.19	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.18	<0.19	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.18	<0.19	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643067)									
EB2110967-047	0207_MW279_210416	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110967-062	0207_MW273_210419	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	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: 3643067) - continued									
EB2110967-062	0207_MW273_210419	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643072)									
EB2110967-093	0207_MW229_210414	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.05	<0.04	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.05	<0.04	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.05	<0.04	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.13	<0.11	16.4	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.13	<0.11	16.4	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.13	<0.11	16.4	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.13	<0.11	16.4	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3649801)									
EB2110967-028	0207_MW236_210414	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110967-060	0207_MW275_210417	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	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: 3649801) - continued									
EB2110967-060	0207_MW275_210417	EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643052)									
EB2110967-001	0207_SW043_210412	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110967-020	0207_MW173_210414	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.23	0.14	49.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643066)									
EB2110967-032	0207_MW223_210414	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.07	<0.08	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	6.65	6.81	2.46	0% - 20%
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	0.74	0.69	5.87	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.07	<0.08	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643067)									
EB2110967-047	0207_MW279_210416	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	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: 3643067) - continued									
EB2110967-062	0207_MW273_210419	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643072)									
EB2110967-093	0207_MW229_210414	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.07	0.08	14.1	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3649801)									
EB2110967-028	0207_MW236_210414	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2110967-060	0207_MW275_210417	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3643052)									
EB2110967-001	0207_SW043_210412	EP231X: Sum of PFAS	----	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.01	0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.01	0.01	0.00	No Limit
EB2110967-020	0207_MW173_210414	EP231X: Sum of PFAS	----	0.01	µg/L	8.43	8.18	3.01	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: 3643052) - continued									
EB2110967-020	0207_MW173_210414	EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	4.33	4.21	2.81	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	7.93	7.67	3.33	0% - 20%
EP231P: PFAS Sums (QC Lot: 3643066)									
EB2110967-032	0207_MW223_210414	EP231X: Sum of PFAS	----	0.01	µg/L	119	121	1.09	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	27.5	26.7	2.95	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	115	116	1.17	0% - 20%
EP231P: PFAS Sums (QC Lot: 3643067)									
EB2110967-047	0207_MW279_210416	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EB2110967-062	0207_MW273_210419	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3643072)									
EB2110967-093	0207_MW229_210414	EP231X: Sum of PFAS	----	0.01	µg/L	45.1	43.0	4.79	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	39.8	37.7	5.45	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	43.5	41.4	4.85	0% - 20%
EP231P: PFAS Sums (QC Lot: 3649801)									
EB2110967-028	0207_MW236_210414	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	29.0	29.1	0.276	0% - 20%
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	14.4	14.5	0.829	0% - 20%
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	25.8	26.0	0.541	0% - 20%
EB2110967-060	0207_MW275_210417	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	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: 3637967)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	88.2	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	83.3	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	83.5	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	85.3	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	82.3	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	83.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637967)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	80.5	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.2	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.8	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.4	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.6	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	77.2	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.4	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.8	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.6	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637967)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.8	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	84.4	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.7	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	85.4	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.2	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.2	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637967)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	86.3	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	94.1	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

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: 3637967) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	106	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: 3643052)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	91.3	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	98.6	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	90.4	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	77.7	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	95.9	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	82.8	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643066)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	85.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	89.5	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	83.4	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	83.4	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	95.9	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	95.8	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643067)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	80.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	86.7	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	81.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	74.2	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	86.0	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	89.8	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643068)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	85.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	86.9	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	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	83.0	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	98.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	91.3	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643072)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	86.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	95.9	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	88.7	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	76.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	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: 3643072) - continued								
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	83.6	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3649801)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	72.3	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	71.1	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.475 µg/L	73.3	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	79.7	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	83.5	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	84.4	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643052)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	110	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	98.4	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	85.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	93.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	84.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	90.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	80.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	84.4	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	89.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	81.2	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	81.0	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643066)								
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	90.0	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	85.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	83.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	84.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	81.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	90.8	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	106	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	79.8	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643067)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.5	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	79.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	76.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	83.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	73.8	71.0	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: 3643067) - continued								
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	81.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	76.6	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	76.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	82.0	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	71.4	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	# 66.2	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643068)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	89.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	86.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	86.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	82.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	86.6	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	82.4	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	94.0	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	79.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	73.6	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643072)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	84.3	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	82.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	77.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	81.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	76.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	80.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	78.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	78.2	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	72.0	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	78.2	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3649801)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	76.3	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	78.0	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	72.0	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	75.8	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	81.8	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	83.4	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	85.4	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: 3649801) - continued								
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	90.4	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	78.4	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	82.6	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	74.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643052)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	91.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	103	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	89.9	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	84.2	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
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	94.6	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643066)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	90.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	89.9	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	83.4	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	83.9	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	84.2	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	79.4	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
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643067)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	76.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	86.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	71.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	80.0	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	80.3	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	85.4	65.0	136

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: 3643067) - continued								
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	78.2	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643068)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	83.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	90.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	81.2	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	78.6	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	83.5	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	74.6	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	70.6	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643072)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	84.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	95.4	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	83.1	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	79.7	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.6	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	78.8	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3649801)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	87.0	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	83.4	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	80.5	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	73.2	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	74.2	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	81.8	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	89.0	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643052)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	87.5	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	102	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
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	82.2	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643066)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	85.1	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	88.3	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	106	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	97.9	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643067)								
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	86.6	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	94.8	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	78.0	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643068)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	83.9	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	91.2	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	90.2	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	75.7	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643072)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	78.3	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	91.0	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	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	80.3	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3649801)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	81.2	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	80.7	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	87.3	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	84.9	62.2	139
EP231P: PFAS Sums (QCLot: 3643052)								
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: 3643066)								
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	----	----	----	----

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
EP231P: PFAS Sums (QCLot: 3643066) - continued								
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3643067)								
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: 3643068)								
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: 3643072)								
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: 3649801)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: 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	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3637967)							
EB2110947-006	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	85.9	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	79.9	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	79.6	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	81.9	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	87.5	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	75.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3637967)							
EB2110947-006	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	77.7	71.0	135

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: 3637967) - continued							
EB2110947-006	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	76.4	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	80.4	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	82.8	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	78.4	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	80.0	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	79.2	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	85.6	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	82.4	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	86.0	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	91.5	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3637967)							
EB2110947-006	Anonymous	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	82.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	82.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	73.7	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	96.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	73.2	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	78.8	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3637967)							
EB2110947-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	84.2	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	78.8	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	95.8	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	92.9	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: 3643052)							
EB2110967-004	0207_SW040_210412	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	86.8	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	93.2	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	86.9	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	74.4	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	107	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	89.6	53.0	142

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: 3643067)							
EB2110967-047	0207_MW279_210416	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	76.2	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	90.4	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	84.2	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	74.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	90.8	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	92.5	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3649801)							
EB2110967-029	0207_MW252_210414	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.443 µg/L	90.7	70.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.47 µg/L	75.3	70.0	130
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.475 µg/L	73.5	70.0	130
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	100	70.0	130
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	75.2	70.0	130
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	97.1	70.0	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643052)							
EB2110967-004	0207_SW040_210412	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	106	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	101	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	81.8	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	86.8	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	80.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	86.2	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	77.4	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	82.8	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	82.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	73.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	73.4	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643067)							
EB2110967-047	0207_MW279_210416	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	85.7	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	78.2	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	74.0	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	79.2	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	74.0	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	79.4	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	71.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	76.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	75.4	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	67.2	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	71.3	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3649801)							

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: 3649801) - continued							
EB2110967-029	0207_MW252_210414	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	93.3	70.0	130
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	92.4	70.0	130
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	79.0	70.0	130
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	93.8	70.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	98.6	70.0	130
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	102	70.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	102	70.0	130
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	104	70.0	130
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	105	70.0	130
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	107	70.0	130
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	99.2	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643052)							
EB2110967-004	0207_SW040_210412	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	92.0	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	93.8	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	90.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	77.9	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	90.5	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	93.6	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	79.4	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643067)							
EB2110967-047	0207_MW279_210416	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	75.0	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	78.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	71.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	73.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	76.1	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	80.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	73.2	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3649801)							
EB2110967-029	0207_MW252_210414	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	106	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
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3649801) - continued							
EB2110967-029	0207_MW252_210414	EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	115	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	95.2	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	94.3	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	101	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	105	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	88.2	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643052)							
EB2110967-004	0207_SW040_210412	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	88.5	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	93.4	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	0.2415 µg/L	74.7	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643067)							
EB2110967-047	0207_MW279_210416	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	78.6	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	87.2	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	88.1	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	71.8	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3649801)							
EB2110967-029	0207_MW252_210414	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.468 µg/L	103	70.0	130
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.475 µg/L	95.4	70.0	130
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	101	70.0	130
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	87.6	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2110967**	Page	: 1 of 16
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 21-Apr-2021
Site	: ----	Issue Date	: 04-May-2021
Sampler	: [redacted]	No. of samples received	: 92
Order number	: 60612563 2.1	No. of samples analysed	: 92

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 Matrix Spike outliers occur.**
- **Laboratory Control 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
Laboratory Control Spike (LCS) Recoveries							
EP231B: Perfluoroalkyl Carboxylic Acids	QC-3643067-002	----	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	66.2 %	71.0-132%	**Recovery less than lower control limit**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	6	68	8.82	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	2	68	2.94	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) 0207_SD007_210412, 0207_SD040_210412, 0207_QC139_210412, 0207_QC141_210412	**12-Apr-2021**	**----**	----	----	**23-Apr-2021**	26-Apr-2021	✓
HDPE Soil Jar (EA055) 0207_SD038_210413, 0207_SD013_210413, 0207_SD102_210413, 0207_SD105_210413, 0207_SD036_210413, 0207_SD037_210413, 0207_QC144_210413	**13-Apr-2021**	**----**	----	----	**23-Apr-2021**	27-Apr-2021	✓
HDPE Soil Jar (EA055) 0207_SD070_210415	**15-Apr-2021**	**----**	----	----	**23-Apr-2021**	29-Apr-2021	✓

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) 0207_SD007_210412, 0207_SD040_210412, 0207_QC139_210412, 0207_QC141_210412	**12-Apr-2021**	**27-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0207_SD038_210413, 0207_SD013_210413, 0207_SD102_210413, 0207_SD105_210413, 0207_SD036_210413, 0207_SD037_210413, 0207_QC144_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0207_SD070_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0207_SD007_210412, 0207_SD040_210412, 0207_QC139_210412, 0207_QC141_210412	**12-Apr-2021**	**27-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0207_SD038_210413, 0207_SD013_210413, 0207_SD102_210413, 0207_SD105_210413, 0207_SD036_210413, 0207_SD037_210413, 0207_QC144_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0207_SD070_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0207_SD007_210412, 0207_SD040_210412, 0207_QC139_210412, 0207_QC141_210412	**12-Apr-2021**	**27-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0207_SD038_210413, 0207_SD013_210413, 0207_SD102_210413, 0207_SD105_210413, 0207_SD036_210413, 0207_SD037_210413, 0207_QC144_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0207_SD070_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓

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) 0207_SD007_210412, 0207_SD040_210412, 0207_QC139_210412, 0207_QC141_210412	**12-Apr-2021**	**27-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0207_SD038_210413, 0207_SD013_210413, 0207_SD102_210413, 0207_SD105_210413, 0207_SD036_210413, 0207_SD037_210413, 0207_QC144_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0207_SD070_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0207_SD007_210412, 0207_SD040_210412, 0207_QC139_210412, 0207_QC141_210412	**12-Apr-2021**	**27-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0207_SD038_210413, 0207_SD013_210413, 0207_SD102_210413, 0207_SD105_210413, 0207_SD036_210413, 0207_SD037_210413, 0207_QC144_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0207_SD070_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓

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)							
0207_SW043_210412, 0207_SW040_210412, 0207_QC138_210412, 0207_MW265_210412, 0207_QC322_210412, 0207_QC140_210412	**12-Apr-2021**	**29-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW255_210413, 0207_SW004_210413, 0207_SW013_210413, 0207_SW011_210413, 0207_QC142_210413, 0207_QC143_210413, 0207_MW264_210413, 0207_SW009_210413, 0207_SW012_210413, 0207_SW010_210413, 0207_QC323_210413,	**13-Apr-2021**	**29-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW173_210414, 0207_MW172_210414, 0207_MW253_210414, 0207_MW241_210414, 0207_MW236_210414, 0207_MW232_210414, 0207_MW223_210414, 0207_MW198_210414, 0207_MW221_210414, 0207_MW174_210414, 0207_QC146_210414, 0207_QC324_210414, 0207_MW254_210414, 0207_MW249_210414, 0207_MW235_210414, 0207_MW252_210414, 0207_MW230_210414, 0207_MW222_210414, 0207_MW206_210414, 0207_MW193_210414, 0207_QC145_210414,	**14-Apr-2021**	**29-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW282_210415, 0207_MW203_210415, 0207_MW285_210415, 0207_QC147_210415, 0207_MW201_210415, 0207_SW028_210415, 0207_QC325_210415, 0207_QC148_210415	**15-Apr-2021**	**29-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW179_210416, 0207_MW279_210416, 0207_QC150_210416, 0207_MW298_210416, 0207_QC327_210416,	**16-Apr-2021**	**29-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW300_210417, 0207_MW167_210417, 0207_MW205_210417, 0207_MW189_210417, 0207_MW178_210417, 0207_MW257_210417, 0207_MW275_210417, 0207_QC328_210417, 0207_MW299_210417, 0207_MW204_210417, 0207_MW202_210417, 0207_MW187_210417, 0207_MW233_210417, 0207_MW274_210417, 0207_MW280_210417, 0207_QC151_210417	**17-Apr-2021**	**29-Apr-2021**	14-Oct-2021	✓	**29-Apr-2021**	14-Oct-2021	✓
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							
0207_MW273_210419, 0207_MW272_210419, 0207_MW276_210419, 0207_MW262_210419, 0207_QC329_210419, 0207_QC152_210419, 0207_QC153_210419, 0207_QC154_210419	**19-Apr-2021**	**29-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW245_210420, 0207_MW242_210420, 0207_MW266_210420, 0207_QC330_210420, 0207_MW229_210414	**20-Apr-2021**	**29-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓

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)							
0207_SW043_210412, 0207_SW040_210412, 0207_QC138_210412, 0207_MW265_210412, 0207_QC322_210412, 0207_QC140_210412	**12-Apr-2021**	**29-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW255_210413, 0207_SW004_210413, 0207_SW013_210413, 0207_SW011_210413, 0207_QC142_210413, 0207_QC143_210413, 0207_MW264_210413, 0207_SW009_210413, 0207_SW012_210413, 0207_SW010_210413, 0207_QC323_210413,	**13-Apr-2021**	**29-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW173_210414, 0207_MW172_210414, 0207_MW253_210414, 0207_MW241_210414, 0207_MW236_210414, 0207_MW232_210414, 0207_MW223_210414, 0207_MW198_210414, 0207_MW221_210414, 0207_MW174_210414, 0207_QC146_210414, 0207_QC324_210414, 0207_MW254_210414, 0207_MW249_210414, 0207_MW235_210414, 0207_MW252_210414, 0207_MW230_210414, 0207_MW222_210414, 0207_MW206_210414, 0207_MW193_210414, 0207_QC145_210414,	**14-Apr-2021**	**29-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW282_210415, 0207_MW203_210415, 0207_MW285_210415, 0207_QC147_210415, 0207_MW201_210415, 0207_SW028_210415, 0207_QC325_210415, 0207_QC148_210415	**15-Apr-2021**	**29-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW179_210416, 0207_MW279_210416, 0207_QC150_210416, 0207_MW298_210416, 0207_QC327_210416,	**16-Apr-2021**	**29-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW300_210417, 0207_MW167_210417, 0207_MW205_210417, 0207_MW189_210417, 0207_MW178_210417, 0207_MW257_210417, 0207_MW275_210417, 0207_QC328_210417, 0207_MW299_210417, 0207_MW204_210417, 0207_MW202_210417, 0207_MW187_210417, 0207_MW233_210417, 0207_MW274_210417, 0207_MW280_210417, 0207_QC151_210417	**17-Apr-2021**	**29-Apr-2021**	14-Oct-2021	✓	**29-Apr-2021**	14-Oct-2021	✓
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							
0207_MW273_210419, 0207_MW272_210419, 0207_MW276_210419, 0207_MW262_210419, 0207_QC329_210419, 0207_QC152_210419, 0207_QC153_210419, 0207_QC154_210419	**19-Apr-2021**	**29-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW245_210420, 0207_MW242_210420, 0207_MW266_210420, 0207_QC330_210420, 0207_MW229_210414	**20-Apr-2021**	**29-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓

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)							
0207_SW043_210412, 0207_SW040_210412, 0207_QC138_210412, 0207_MW265_210412, 0207_QC322_210412, 0207_QC140_210412	**12-Apr-2021**	**29-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW255_210413, 0207_SW004_210413, 0207_SW013_210413, 0207_SW011_210413, 0207_QC142_210413, 0207_QC143_210413, 0207_MW264_210413, 0207_SW009_210413, 0207_SW012_210413, 0207_SW010_210413, 0207_QC323_210413,	**13-Apr-2021**	**29-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW173_210414, 0207_MW172_210414, 0207_MW253_210414, 0207_MW241_210414, 0207_MW236_210414, 0207_MW232_210414, 0207_MW223_210414, 0207_MW198_210414, 0207_MW221_210414, 0207_MW174_210414, 0207_QC146_210414, 0207_QC324_210414, 0207_MW254_210414, 0207_MW249_210414, 0207_MW235_210414, 0207_MW252_210414, 0207_MW230_210414, 0207_MW222_210414, 0207_MW206_210414, 0207_MW193_210414, 0207_QC145_210414,	**14-Apr-2021**	**29-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW282_210415, 0207_MW203_210415, 0207_MW285_210415, 0207_QC147_210415, 0207_MW201_210415, 0207_SW028_210415, 0207_QC325_210415, 0207_QC148_210415	**15-Apr-2021**	**29-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW179_210416, 0207_MW279_210416, 0207_QC150_210416, 0207_MW298_210416, 0207_QC327_210416,	**16-Apr-2021**	**29-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW300_210417, 0207_MW167_210417, 0207_MW205_210417, 0207_MW189_210417, 0207_MW178_210417, 0207_MW257_210417, 0207_MW275_210417, 0207_QC328_210417, 0207_MW299_210417, 0207_MW204_210417, 0207_MW202_210417, 0207_MW187_210417, 0207_MW233_210417, 0207_MW274_210417, 0207_MW280_210417, 0207_QC151_210417	**17-Apr-2021**	**29-Apr-2021**	14-Oct-2021	✓	**29-Apr-2021**	14-Oct-2021	✓
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							
0207_MW273_210419, 0207_MW272_210419, 0207_MW276_210419, 0207_MW262_210419, 0207_QC329_210419, 0207_QC152_210419, 0207_QC153_210419, 0207_QC154_210419	**19-Apr-2021**	**29-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW245_210420, 0207_MW242_210420, 0207_MW266_210420, 0207_QC330_210420, 0207_MW229_210414	**20-Apr-2021**	**29-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓

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)							
0207_SW043_210412, 0207_SW040_210412, 0207_QC138_210412, 0207_MW265_210412, 0207_QC322_210412, 0207_QC140_210412	**12-Apr-2021**	**29-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW255_210413, 0207_SW004_210413, 0207_SW013_210413, 0207_SW011_210413, 0207_QC142_210413, 0207_QC143_210413, 0207_MW264_210413, 0207_SW009_210413, 0207_SW012_210413, 0207_SW010_210413, 0207_QC323_210413,	**13-Apr-2021**	**29-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW173_210414, 0207_MW172_210414, 0207_MW253_210414, 0207_MW241_210414, 0207_MW236_210414, 0207_MW232_210414, 0207_MW223_210414, 0207_MW198_210414, 0207_MW221_210414, 0207_MW174_210414, 0207_QC146_210414, 0207_QC324_210414, 0207_MW254_210414, 0207_MW249_210414, 0207_MW235_210414, 0207_MW252_210414, 0207_MW230_210414, 0207_MW222_210414, 0207_MW206_210414, 0207_MW193_210414, 0207_QC145_210414,	**14-Apr-2021**	**29-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW282_210415, 0207_MW203_210415, 0207_MW285_210415, 0207_QC147_210415, 0207_MW201_210415, 0207_SW028_210415, 0207_QC325_210415, 0207_QC148_210415	**15-Apr-2021**	**29-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW179_210416, 0207_MW279_210416, 0207_QC150_210416, 0207_MW298_210416, 0207_QC327_210416,	**16-Apr-2021**	**29-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW300_210417, 0207_MW167_210417, 0207_MW205_210417, 0207_MW189_210417, 0207_MW178_210417, 0207_MW257_210417, 0207_MW275_210417, 0207_QC328_210417, 0207_MW299_210417, 0207_MW204_210417, 0207_MW202_210417, 0207_MW187_210417, 0207_MW233_210417, 0207_MW274_210417, 0207_MW280_210417, 0207_QC151_210417	**17-Apr-2021**	**29-Apr-2021**	14-Oct-2021	✓	**29-Apr-2021**	14-Oct-2021	✓
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							
0207_MW273_210419, 0207_MW272_210419, 0207_MW276_210419, 0207_MW262_210419, 0207_QC329_210419, 0207_QC152_210419, 0207_QC153_210419, 0207_QC154_210419	**19-Apr-2021**	**29-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW245_210420, 0207_MW242_210420, 0207_MW266_210420, 0207_QC330_210420, 0207_MW229_210414	**20-Apr-2021**	**29-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓

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)							
0207_SW043_210412, 0207_MW265_210412, 0207_SW040_210412, 0207_QC322_210412, 0207_QC138_210412, 0207_QC140_210412	**12-Apr-2021**	**29-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW255_210413, 0207_MW264_210413, 0207_SW004_210413, 0207_SW009_210413, 0207_SW013_210413, 0207_SW012_210413, 0207_SW011_210413, 0207_SW010_210413, 0207_QC142_210413, 0207_QC323_210413, 0207_QC143_210413	**13-Apr-2021**	**29-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW173_210414, 0207_QC324_210414, 0207_MW172_210414, 0207_MW254_210414, 0207_MW253_210414, 0207_MW249_210414, 0207_MW241_210414, 0207_MW235_210414, 0207_MW236_210414, 0207_MW252_210414, 0207_MW232_210414, 0207_MW230_210414, 0207_MW223_210414, 0207_MW222_210414, 0207_MW198_210414, 0207_MW206_210414, 0207_MW221_210414, 0207_MW193_210414, 0207_MW174_210414, 0207_QC145_210414, 0207_QC146_210414	**14-Apr-2021**	**29-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW282_210415, 0207_MW201_210415, 0207_MW203_210415, 0207_SW028_210415, 0207_MW285_210415, 0207_QC325_210415, 0207_QC147_210415, 0207_QC148_210415	**15-Apr-2021**	**29-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_MW179_210416, 0207_MW298_210416, 0207_MW279_210416, 0207_QC327_210416, 0207_QC150_210416	**16-Apr-2021**	**29-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW300_210417, 0207_MW299_210417, 0207_MW167_210417, 0207_MW204_210417, 0207_MW205_210417, 0207_MW202_210417, 0207_MW189_210417, 0207_MW187_210417, 0207_MW178_210417, 0207_MW233_210417, 0207_MW257_210417, 0207_MW274_210417, 0207_MW275_210417, 0207_MW280_210417, 0207_QC328_210417, 0207_QC151_210417	**17-Apr-2021**	**29-Apr-2021**	14-Oct-2021	✓	**29-Apr-2021**	14-Oct-2021	✓
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							
0207_MW273_210419, 0207_MW272_210419, 0207_MW276_210419, 0207_MW262_210419, 0207_QC329_210419, 0207_QC152_210419, 0207_QC153_210419, 0207_QC154_210419	**19-Apr-2021**	**29-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0207_MW245_210420, 0207_MW242_210420, 0207_MW266_210420, 0207_QC330_210420, 0207_MW229_210414	**20-Apr-2021**	**29-Apr-2021**	17-Oct-2021	✓	**29-Apr-2021**	17-Oct-2021	✓

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	17	**11.76**	**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	6	68	**8.82**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	5	68	**7.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	5	68	**7.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	68	**2.94**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	17	**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 5.3, 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.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. 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.

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.
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
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 : **EB2111757**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: ----	Quote number	: ES2020AECOMAU0033 (EN/004/20)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 29-Apr-2021 10:08	Issue Date	: 30-Apr-2021
Client Requested Due Date	: 10-May-2021	Scheduled Reporting Date	: **10-May-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not intact.
No. of coolers/boxes	: 1	Temperature	: -0.5°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2111757-001	28-Apr-2021 00:00	0207_MW022_210428	✓

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]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- *AU Certificate of Analysis - NATA (COA)	Email	derp.labreports@esdat.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	derp.labreports@esdat.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	derp.labreports@esdat.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	derp.labreports@esdat.com.au
- Chain of Custody (CoC) (COC)	Email	derp.labreports@esdat.com.au
- EDI Format - ENMRG (ENMRG)	Email	derp.labreports@esdat.com.au
- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2111757**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 29-Apr-2021 10:08
Order number	: 60612563 2.1	Date Analysis Commenced	: 06-May-2021
C-O-C number	: ----	Issue Date	: 10-May-2021 17:01
Sampler	: [redacted]		
Site	: ----		
Quote number	: EN/004/20		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW022_210428	----	----	----	----
				Sampling date / time	28-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2111757-001	--------	--------	--------	--------
					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	0.02	µg/L		**0.18**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.37**	----	----	----	----
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		**0.03**	----	----	----	----
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	0207_MW022_210428	----	----	----	----
				Sampling date / time	28-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2111757-001	--------	--------	--------	--------
					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		**0.63**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.55**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.61**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**91.6**	----	----	----	----
13C8-PFOA	----	0.02	%		**103**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2111757**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 29-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 06-May-2021
C-O-C number	: ----	Issue Date	: 10-May-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: EN/004/20		
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]	[redacted]	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

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: 3658511)									
EB2111764-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	7.68	7.34	4.5	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.56	0.59	5.1	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.56	0.58	3.0	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	3.39	3.49	2.9	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.37	0.36	0.0	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2111782-002	Anonymous	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: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	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: 3658511)									
EB2111764-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.25	0.27	9.1	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.19	0.20	5.1	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.86	0.92	7.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.14	0.16	10.5	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
EB2111782-002	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	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 (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3658511) - continued									
EB2111782-002	Anonymous	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: 3658511)									
EB2111764-001	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
EB2111782-002	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: 3658511)									
EB2111764-001	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: 3658511) - continued									
EB2111764-001	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
EB2111782-002	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: 3658511)									
EB2111764-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	14.1	14.0	0.5	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	11.1	10.8	2.2	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	13.2	13.1	0.8	0% - 20%
EB2111782-002	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: 3658511)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	98.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	97.6	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	88.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	89.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	113	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: 3658511)								
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	93.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	94.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	95.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	95.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	89.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	86.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	94.2	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	90.4	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	103	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3658511)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	102	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	95.3	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	83.8	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	94.8	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	98.5	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	92.6	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3658511)								
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	98.8	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	101	67.0	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3658511) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	89.6	64.2	133
EP231P: PFAS Sums (QCLot: 3658511)								
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: 3658511)							
EB2111782-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	107	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	111	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	102	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	93.1	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	140	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	112	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3658511)							
EB2111782-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	105	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	105	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	102	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	104	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.8	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	102	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	101	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	104	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	103	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	98.6	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	110	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3658511)							
EB2111782-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	110	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	114	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	106	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3658511) - continued							
EB2111782-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	106	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	112	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	113	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: 3658511)							
EB2111782-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	104	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	113	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	124	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	106	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2111757**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Date Samples Received	: 29-Apr-2021
Site	: ----	Issue Date	: 10-May-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW022_210428	**28-Apr-2021**	**06-May-2021**	25-Oct-2021	✓	**06-May-2021**	25-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW022_210428	**28-Apr-2021**	**06-May-2021**	25-Oct-2021	✓	**06-May-2021**	25-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW022_210428	**28-Apr-2021**	**06-May-2021**	25-Oct-2021	✓	**06-May-2021**	25-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW022_210428	**28-Apr-2021**	**06-May-2021**	25-Oct-2021	✓	**06-May-2021**	25-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW022_210428	**28-Apr-2021**	**06-May-2021**	25-Oct-2021	✓	**06-May-2021**	25-Oct-2021	✓

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	10	**20.00**	**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

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 : **EB2111764**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: ----	Quote number	: ES2020AECOMAU0033 (EN/004/20)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 29-Apr-2021 10:08	Issue Date	: 30-Apr-2021
Client Requested Due Date	: 10-May-2021	Scheduled Reporting Date	: **10-May-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not intact.
No. of coolers/boxes	: 1	Temperature	: -0.5°C - Ice present
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2111764-001	28-Apr-2021 00:00	0207_MW157_210428	✓
EB2111764-002	28-Apr-2021 00:00	0207_MW122_210428	✓
EB2111764-003	28-Apr-2021 00:00	0207_MW118_210428	✓
EB2111764-004	28-Apr-2021 00:00	0207_MW114_210428	✓

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	AP_CustomerService.ANZ@aecom.com
- Chain of Custody (CoC) (COC)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- *AU Certificate of Analysis - NATA (COA)	Email	derp.labreports@esdat.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	derp.labreports@esdat.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	derp.labreports@esdat.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	derp.labreports@esdat.com.au
- Chain of Custody (CoC) (COC)	Email	derp.labreports@esdat.com.au
- EDI Format - ENMRG (ENMRG)	Email	derp.labreports@esdat.com.au
- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ENMRG (ENMRG)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2111764**	Page	: 1 of 5
Amendment	: **1**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 29-Apr-2021 10:08
Order number	: 60612563 2.1	Date Analysis Commenced	: 06-May-2021
C-O-C number	: ----	Issue Date	: 13-May-2021 15:22
Sampler	: [redacted]		
Site	: ----		
Quote number	: EN/004/20		
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]	[redacted]	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 Contact 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 (13/05/2021): This report has been amended to alter the project name. 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	0207_MW157_210428	0207_MW122_210428	0207_MW118_210428	0207_MW114_210428	----
				Sampling date / time	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	----
Compound	CAS Number	LOR	Unit		EB2111764-001	EB2111764-002	EB2111764-003	EB2111764-004	--------
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.56**	**0.17**	<0.02	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.56**	**0.18**	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**3.39**	**1.02**	<0.02	<0.02	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.37**	**0.06**	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**7.68**	**1.04**	<0.01	<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		**0.19**	**0.08**	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.86**	**0.30**	<0.02	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.14**	**0.05**	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.25**	**0.06**	<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	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW157_210428	0207_MW122_210428	0207_MW118_210428	0207_MW114_210428	----
				Sampling date / time	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	28-Apr-2021 00:00	----
Compound	CAS Number	LOR	Unit		EB2111764-001	EB2111764-002	EB2111764-003	EB2111764-004	--------
					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	----
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		**14.1**	**2.96**	<0.01	<0.01	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**11.1**	**2.06**	<0.01	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**13.2**	**2.72**	<0.01	<0.01	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**117**	**97.7**	**120**	**98.0**	----
13C8-PFOA	----	0.02	%		**101**	**101**	**102**	**102**	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2111764**	Page	: 1 of 7
Amendment	: **1**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 29-Apr-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 06-May-2021
C-O-C number	: ----	Issue Date	: 13-May-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: EN/004/20		
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]	[redacted]	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

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: 3658511)									
EB2111764-001	0207_MW157_210428	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	7.68	7.34	4.5	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.56	0.59	5.1	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.56	0.58	3.0	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	3.39	3.49	2.9	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.37	0.36	0.0	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2111782-002	Anonymous	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: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	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: 3658511)									
EB2111764-001	0207_MW157_210428	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.25	0.27	9.1	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.19	0.20	5.1	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.86	0.92	7.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.14	0.16	10.5	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
EB2111782-002	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	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 (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3658511) - continued									
EB2111782-002	Anonymous	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: 3658511)									
EB2111764-001	0207_MW157_210428	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
EB2111782-002	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: 3658511)									
EB2111764-001	0207_MW157_210428	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: 3658511) - continued									
EB2111764-001	0207_MW157_210428	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
EB2111782-002	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: 3658511)									
EB2111764-001	0207_MW157_210428	EP231X: Sum of PFAS	----	0.01	µg/L	14.1	14.0	0.5	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	11.1	10.8	2.2	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	13.2	13.1	0.8	0% - 20%
EB2111782-002	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: 3658511)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	98.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	97.6	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	88.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	89.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	113	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: 3658511)								
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	93.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	94.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	95.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	95.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	89.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	86.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	94.2	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	90.4	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	103	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3658511)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	102	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	95.3	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	83.8	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	94.8	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	98.5	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	92.6	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3658511)								
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	98.8	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	101	67.0	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3658511) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	89.6	64.2	133
EP231P: PFAS Sums (QCLot: 3658511)								
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: 3658511)							
EB2111782-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	107	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	111	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	102	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	93.1	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	140	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	112	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3658511)							
EB2111782-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	105	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	105	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	102	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	104	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.8	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	102	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	101	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	104	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	103	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	98.6	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	110	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3658511)							
EB2111782-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	110	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	114	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	106	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3658511) - continued							
EB2111782-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	106	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	112	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	113	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: 3658511)							
EB2111782-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	104	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	113	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	124	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	106	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2111764**	Page	: 1 of 4
Amendment	: **1**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 29-Apr-2021
Site	: ----	Issue Date	: 13-May-2021
Sampler	[redacted]	No. of samples received	: 4
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW157_210428, 0207_MW122_210428, 0207_MW118_210428, 0207_MW114_210428	**28-Apr-2021**	**06-May-2021**	25-Oct-2021	✓	**06-May-2021**	25-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW157_210428, 0207_MW122_210428, 0207_MW118_210428, 0207_MW114_210428	**28-Apr-2021**	**06-May-2021**	25-Oct-2021	✓	**06-May-2021**	25-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW157_210428, 0207_MW122_210428, 0207_MW118_210428, 0207_MW114_210428	**28-Apr-2021**	**06-May-2021**	25-Oct-2021	✓	**06-May-2021**	25-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW157_210428, 0207_MW122_210428, 0207_MW118_210428, 0207_MW114_210428	**28-Apr-2021**	**06-May-2021**	25-Oct-2021	✓	**06-May-2021**	25-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW157_210428, 0207_MW122_210428, 0207_MW118_210428, 0207_MW114_210428	**28-Apr-2021**	**06-May-2021**	25-Oct-2021	✓	**06-May-2021**	25-Oct-2021	✓

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	10	**20.00**	**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

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 : **EB2112336**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0207_PFASOMP	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 06-May-2021 18:02	Issue Date	: 06-May-2021
Client Requested Due Date	: 12-May-2021	Scheduled Reporting Date	: **12-May-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: <5.0°C
Receipt Detail	: MEDIUM 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
- 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.

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)
EB2112336-001	19-Apr-2021 00:00	0207_MW134_210419	✓

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	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2112336**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 06-May-2021 18:02
Order number	: 60612563 2.1	Date Analysis Commenced	: 07-May-2021
C-O-C number	: ----	Issue Date	: 11-May-2021 17:15
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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 Contact 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: WATER (Matrix: WATER)				Sample ID	0207_MW134_210419	----	----	----	----
				Sampling date / time	19-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2112336-001	--------	--------	--------	--------
					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	0.02	µg/L		**0.02**	----	----	----	----
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	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW134_210419	----	----	----	----
				Sampling date / time	19-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2112336-001	--------	--------	--------	--------
					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		**0.04**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.04**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.04**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**105**	----	----	----	----
13C8-PFOA	----	0.02	%		**102**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2112336**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 06-May-2021
Order number	: 60612563 2.1	Date Analysis Commenced	: 07-May-2021
C-O-C number	: ----	Issue Date	: 11-May-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
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]	[redacted]	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

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: 3663558)									
EB2111924-001	Anonymous	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: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	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
EB2111926-003	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.03	0.04	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.05	0.05	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.06	0.06	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.27	0.27	0.0	0% - 50%
		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: 3663558)									
EB2111924-001	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	<0.02	<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
EB2111926-003	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	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: 3663558) - continued									
EB2111926-003	Anonymous	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
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3663558)									
EB2111924-001	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
EB2111926-003	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: 3663558)									
EB2111924-001	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: 3663558) - continued									
EB2111924-001	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
EB2111926-003	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: 3663558)									
EB2111924-001	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
EB2111926-003	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.46	0.47	2.2	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.30	0.31	3.3	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.40	0.41	2.5	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: **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: 3663558)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	97.8	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	0.02	µg/L	<0.02	0.2373 µg/L	92.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	88.0	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	111	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3663558)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	92.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	99.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	92.4	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	101	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	85.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	94.6	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	102	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	107	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3663558)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	110	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	88.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	73.4	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	105	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	90.0	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	104	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	93.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3663558)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	98.4	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	88.5	67.0	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3663558) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	90.0	64.2	133
EP231P: PFAS Sums (QCLot: 3663558)								
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: 3663558)							
EB2111926-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	91.5	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	93.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	88.5	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	84.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	96.4	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	89.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3663558)							
EB2111926-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	93.6	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	92.1	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	88.6	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	89.1	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	81.9	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	91.6	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	82.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	94.9	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	94.2	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	99.0	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3663558)							
EB2111926-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	101	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	78.6	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	83.8	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*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3663558) - continued							
EB2111926-002	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	96.8	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	94.6	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	104	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3663558)							
EB2111926-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	94.4	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	103	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	86.1	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	110	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2112336**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0207_PFASOMP	Date Samples Received	: 06-May-2021
Site	: ----	Issue Date	: 11-May-2021
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	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

- **NO Quality Control Sample Frequency Outliers exist.**

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)							
0207_MW134_210419	**19-Apr-2021**	**07-May-2021**	16-Oct-2021	✓	**07-May-2021**	16-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW134_210419	**19-Apr-2021**	**07-May-2021**	16-Oct-2021	✓	**07-May-2021**	16-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW134_210419	**19-Apr-2021**	**07-May-2021**	16-Oct-2021	✓	**07-May-2021**	16-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW134_210419	**19-Apr-2021**	**07-May-2021**	16-Oct-2021	✓	**07-May-2021**	16-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW134_210419	**19-Apr-2021**	**07-May-2021**	16-Oct-2021	✓	**07-May-2021**	16-Oct-2021	✓

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	9	**22.22**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	9	**11.11**	**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.

Australian Government
Department of Industry, Science, Energy and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone:

Fax:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: [redacted]

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

Fax:

SAMPLE DETAILS

NMI Job Name: **AECO06/210423**

Total No. of Samples: **1**

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N21/010437	30-APR-2021	1435_QC249_210416	WATER 16/04/2021

SAMPLE RECEIVED CONDITION

Date samples received:	23-APR-2021
Sample received in good order:	Yes
NMI Quotation no. provided:	QLD_0207_PFASOMP
Client purchase order number:	60612563_2_1
Temperature of samples:	Chilled
Comments:	Please advise the correct email address of [redacted], some COC are type mui was on our system.
Mode of Delivery:	Courier

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

Australian Government
Department of Industry, Science, Energy and Resources

National Measurement Institute

NATA

REPORT OF ANALYSIS

Report No. RN1312580

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/210423
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_2_1
		Date Received	: 23-APR-2021
Attention	:	**Sampled By**	: CLIENT
Project Name	: QLD_0207_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/010437	1435_QC249_210416	WATER 16/04/2021

Lab Reg No.		N21/010437				
Date Sampled		16-APR-2021				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	0.45				NR70
PFPeA (2706-90-3)	ug/L	2.6				NR70
PFHxA (307-24-4)	ug/L	1.4				NR70
PFHpA (375-85-9)	ug/L	0.29				NR70
PFOA (335-67-1)	ug/L	0.051				NR70
PFNA (375-95-1)	ug/L	<0.01				NR70
PFDA (335-76-2)	ug/L	<0.01				NR70
PFUdA (2058-94-8)	ug/L	<0.01				NR70
PFDoA (307-55-1)	ug/L	<0.01				NR70
PFTrDA (72629-94-8)	ug/L	<0.02				NR70
PFTeDA (376-06-7)	ug/L	<0.02				NR70
PFHxDA (67905-19-5)	ug/L	<0.02				NR70
PFODA (16517-11-6)	ug/L	<0.05				NR70
FOUEA (70887-84-2)	ug/L	<0.01				NR70
PFDS (335-77-3)	ug/L	<0.01				NR70
PFPeS (2706-91-4)	ug/L	0.18				NR70
PFHxS (355-46-4)	ug/L	0.50				NR70
PFHpS (375-92-8)	ug/L	<0.01				NR70
PFOS (1763-23-1)	ug/L	<0.02				NR70
PFNS (68259-12-1)	ug/L	<0.01				NR70
PFBS (375-73-5)	ug/L	0.32				NR70
PFOSA (754-91-6)	ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05				NR70
4:2 FTS (757124-72-4)	ug/L	<0.01				NR70
6:2 FTS (27619-97-2)	ug/L	0.74				NR70

REPORT OF ANALYSIS

Lab Reg No.		N21/010437				
Date Sampled		16-APR-2021				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	ug/L	0.018				NR70
10:2 FTS (120226-60-0)	ug/L	<0.01				NR70
8:2 diPAP (678-41-1)	ug/L	<0.02				NR70
PFBA (Surrogate Recovery)	%	102				NR70
PFPeA (Surrogate Recovery)	%	86				NR70
PFHxA (Surrogate Recovery)	%	100				NR70
PFHpA (Surrogate Recovery)	%	114				NR70
PFOA (Surrogate Recovery)	%	114				NR70
PFNA (Surrogate Recovery)	%	85				NR70
PFDA (Surrogate Recovery)	%	90				NR70
PFUdA (Surrogate Recovery)	%	90				NR70
PFDoA (Surrogate Recovery)	%	75				NR70
PFTeDA (Surrogate Recovery)	%	76				NR70
PFHxDA (Surrogate Recovery)	%	96				NR70
FOUEA (Surrogate Recovery)	%	89				NR70
PFBS (Surrogate Recovery)	%	98				NR70
PFHxS (Surrogate Recovery)	%	103				NR70
PFOS (Surrogate Recovery)	%	108				NR70
PFOSA (Surrogate Recovery)	%	76				NR70
N-MeFOSA (Surrogate Recovery)	%	64				NR70
N-EtFOSA (Surrogate Recovery)	%	79				NR70
N-MeFOSAA (Surrogate Recovery)	%	64				NR70
N-EtFOSAA (Surrogate Recovery)	%	68				NR70
N-MeFOSE (Surrogate Recovery)	%	87				NR70
N-EtFOSE (Surrogate Recovery)	%	81				NR70
4:2 FTS (Surrogate Recovery)	%	60				NR70
6:2 FTS (Surrogate Recovery)	%	76				NR70
8:2 FTS (Surrogate Recovery)	%	63				NR70
8:2 diPAP (Surrogate Recovery)	%	78				NR70
Dates						
Date extracted		28-APR-2021				
Date analysed		29-APR-2021				

N21/010437
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

REPORT OF ANALYSIS

Lab Reg No.		N21/010437				
Date Sampled		16-APR-2021				
	Units					Method

[redacted]

Organics - NSW
Accreditation No. 198

30-APR-2021

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

This Report supersedes reports: *RN1312540*

Measurement Uncertainty is available upon request.
Chemical Accreditation 198: 105 Delhi Road, North Ryde, NSW, 2113

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/210423 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	103	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	90	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	96	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	88	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	89	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	96	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	93	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	92	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	88	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	96	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	93	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	90	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	92	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	92	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	98	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	95	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	90	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	89	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	104	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	78	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	99	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	100	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	91	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	94	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	94	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

[redacted]

Date: **30/04/2021**

[redacted]

Australian Government
Department of Industry, Science, Energy and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone:

Fax:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: [redacted]

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

Fax:

SAMPLE DETAILS

NMI Job Name: AECO06/210423/2

Total No. of Samples: 16

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N21/010444	4-MAY-2021	0207_QC238_210412	WATER 12/04/21
N21/010445	4-MAY-2021	0207_QC239_210412	SEDIMENT 12/04/21
N21/010446	4-MAY-2021	0207_QC240_210412	WATER 12/04/21
N21/010447	4-MAY-2021	0207_QC241_210412	SEDIMENT 12/04/21
N21/010448	4-MAY-2021	0207_QC242_210413	WATER 13/04/21
N21/010449	4-MAY-2021	0207_QC243_210413	WATER 13/04/21
N21/010450	4-MAY-2021	0207_QC244_210413	SEDIMENT 13/04/21
N21/010451	4-MAY-2021	0207_QC245_210414	WATER 14/04/21
N21/010452	4-MAY-2021	0207_QC246_210414	WATER 14/04/21
N21/010453	4-MAY-2021	0207_QC247_210415	WATER 15/04/21
N21/010454	4-MAY-2021	0207_QC248_210415	WATER 15/04/21

[redacted]

N21/010455	4-MAY-2021	0207_QC250_210416	WATER 16/04/21
N21/010456	4-MAY-2021	0207_QC251_210417	WATER 17/04/21
N21/010457	4-MAY-2021	0207_QC252_210419	WATER 19/04/21
N21/010458	4-MAY-2021	0207_QC253_210419	WATER 19/04/21
N21/010459	4-MAY-2021	0207_QC254_210419	WATER 19/04/21

SAMPLE RECEIVED CONDITION

Date samples received:	23-APR-2021
Sample received in good order:	Yes
NMI Quotation no. provided:	QLD_0207_PFASOMP
Client purchase order number:	60612563_2_1
Temperature of samples:	Chilled
Comments:	ALL OK
Mode of Delivery:	Courier

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

REPORT OF ANALYSIS

Client	: [redacted]	**Job No.**	: AECO06/210423/2
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_2_1
		Date Received	: 23-APR-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: 60612563_2_1		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/010445	0207_QC239_210412	SEDIMENT 12/04/21
N21/010447	0207_QC241_210412	SEDIMENT 12/04/21
N21/010450	0207_QC244_210413	SEDIMENT 13/04/21

Lab Reg No.		N21/010445	N21/010447	N21/010450		
Date Sampled		12-APR-2021	12-APR-2021	13-APR-2021		
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.002	<0.002	<0.002		NR70
PFPeA (2706-90-3)	mg/kg	<0.002	<0.002	<0.002		NR70
PFHxA (307-24-4)	mg/kg	<0.001	<0.001	<0.001		NR70
PFHpA (375-85-9)	mg/kg	<0.001	<0.001	<0.001		NR70
PFOA (335-67-1)	mg/kg	<0.001	<0.001	<0.001		NR70
PFNA (375-95-1)	mg/kg	<0.001	<0.001	<0.001		NR70
PFDA (335-76-2)	mg/kg	<0.001	<0.001	<0.001		NR70
PFUdA (2058-94-8)	mg/kg	<0.002	<0.002	<0.002		NR70
PFDoA (307-55-1)	mg/kg	<0.002	<0.002	<0.002		NR70
PFTrDA (72629-94-8)	mg/kg	<0.002	<0.002	<0.002		NR70
PFTeDA (376-06-7)	mg/kg	<0.002	<0.002	<0.002		NR70
PFHxDA (67905-19-5)	mg/kg	<0.002	<0.002	<0.002		NR70
PFODA (16517-11-6)	mg/kg	<0.005	<0.005	<0.005		NR70
FOUEA (70887-84-2)	mg/kg	<0.001	<0.001	<0.001		NR70
PFBS (375-73-5)	mg/kg	<0.001	<0.001	<0.001		NR70
PFPeS (2706-91-4)	mg/kg	<0.001	<0.001	<0.001		NR70
PFHxS (355-46-4)	mg/kg	<0.001	<0.001	0.0010		NR70
PFHpS (375-92-8)	mg/kg	<0.001	<0.001	<0.001		NR70
PFOS (1763-23-1)	mg/kg	<0.002	<0.002	0.013		NR70
PFNS (68259-12-1)	mg/kg	<0.001	<0.001	<0.001		NR70
PFDS (335-77-3)	mg/kg	<0.001	<0.001	<0.001		NR70
PFOSA (754-91-6)	mg/kg	<0.001	<0.001	<0.001		NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002	<0.002	<0.002		NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002	<0.002	<0.002		NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002	<0.002	<0.002		NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002	<0.002	<0.002		NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005	<0.005	<0.005		NR70
N-EtFOSE (1691-99-2)	mg/kg	<0.005	<0.005	<0.005		NR70

REPORT OF ANALYSIS

Lab Reg No.		N21/010445	N21/010447	N21/010450		
Date Sampled		12-APR-2021	12-APR-2021	13-APR-2021		
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
4:2 FTS (757124-72-4)	mg/kg	<0.001	<0.001	<0.001		NR70
6:2 FTS (27619-97-2)	mg/kg	<0.001	<0.001	<0.001		NR70
8:2 FTS (39108-34-4)	mg/kg	<0.001	<0.001	<0.001		NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002	<0.002	<0.002		NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002	<0.002	<0.002		NR70
PFBA (Surrogate Recovery)	%	82	75	81		NR70
PFPeA (Surrogate Recovery)	%	78	75	74		NR70
PFHxA (Surrogate Recovery)	%	82	80	80		NR70
PFHpA (Surrogate Recovery)	%	81	79	81		NR70
PFOA (Surrogate Recovery)	%	81	79	77		NR70
PFNA (Surrogate Recovery)	%	89	87	77		NR70
PFDA (Surrogate Recovery)	%	89	85	87		NR70
PFUdA (Surrogate Recovery)	%	82	87	81		NR70
PFDoA (Surrogate Recovery)	%	83	74	79		NR70
PFTeDA (Surrogate Recovery)	%	87	96	71		NR70
PFHxDA (Surrogate Recovery)	%	71	44	64		NR70
FOUEA (Surrogate Recovery)	%	54	56	52		NR70
PFBS (Surrogate Recovery)	%	69	71	72		NR70
PFHxS (Surrogate Recovery)	%	76	78	78		NR70
PFOS (Surrogate Recovery)	%	96	85	89		NR70
PFOSA (Surrogate Recovery)	%	89	73	79		NR70
N-MeFOSA (Surrogate Recovery)	%	60	64	75		NR70
N-EtFOSA (Surrogate Recovery)	%	78	70	70		NR70
N-MeFOSAA (Surrogate Recovery)	%	74	67	71		NR70
N-EtFOSAA (Surrogate Recovery)	%	75	84	80		NR70
N-MeFOSE (Surrogate Recovery)	%	76	75	60		NR70
N-EtFOSE (Surrogate Recovery)	%	38	48	37		NR70
4:2 FTS (Surrogate Recovery)	%	59	69	59		NR70
6:2 FTS (Surrogate Recovery)	%	57	55	68		NR70
8:2 FTS (Surrogate Recovery)	%	76	101	72		NR70
8:2 diPAP (Surrogate Recovery)	%	62	110	76		NR70
Dates						
Date extracted		3-MAY-2021	3-MAY-2021	3-MAY-2021		
Date analysed		3-MAY-2021	3-MAY-2021	3-MAY-2021		

N21/010445
to
N21/010450

REPORT OF ANALYSIS

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

04-MAY-2021

Lab Reg No.		N21/010445	N21/010447	N21/010450		
Date Sampled		12-APR-2021	12-APR-2021	13-APR-2021		
	Units					Method
Trace Elements						
Total Solids	%	64.8	83.8	69.9		NT2_49
Dates						
Date extracted		27-APR-2021	27-APR-2021	27-APR-2021		
Date analysed		28-APR-2021	28-APR-2021	28-APR-2021		

[redacted]

04-MAY-2021

All results are expressed on a dry weight basis.

REPORT OF ANALYSIS

Report No. RN1312932

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/210423/2
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_2_1
		Date Received	: 23-APR-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: 60612563_2_1		
Your Client Services Manager	: Danny Slee	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/010444	0207_QC238_210412	WATER 12/04/21
N21/010446	0207_QC240_210412	WATER 12/04/21
N21/010448	0207_QC242_210413	WATER 13/04/21
N21/010449	0207_QC243_210413	WATER 13/04/21

Lab Reg No.			N21/010444	N21/010446	N21/010448	N21/010449	
Date Sampled			12-APR-2021	12-APR-2021	13-APR-2021	13-APR-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
PFPeA (2706-90-3)		ug/L	<0.02	<0.02	<0.02	0.031	NR70
PFHxA (307-24-4)		ug/L	<0.01	0.012	0.014	0.063	NR70
PFHpA (375-85-9)		ug/L	<0.01	0.011	<0.01	<0.01	NR70
PFOA (335-67-1)		ug/L	<0.01	<0.01	<0.01	0.016	NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)		ug/L	<0.01	<0.01	0.019	0.029	NR70
PFHxS (355-46-4)		ug/L	0.014	0.017	0.11	0.18	NR70
PFHpS (375-92-8)		ug/L	<0.01	<0.01	<0.01	0.011	NR70
PFOS (1763-23-1)		ug/L	<0.02	<0.02	0.042	0.53	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)		ug/L	<0.01	<0.01	0.020	0.049	NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.			N21/010444	N21/010446	N21/010448	N21/010449	
Date Sampled			12-APR-2021	12-APR-2021	13-APR-2021	13-APR-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	99	110	99	113	NR70
PFPeA (Surrogate Recovery)		%	103	106	102	103	NR70
PFHxA (Surrogate Recovery)		%	106	113	108	104	NR70
PFHpA (Surrogate Recovery)		%	104	111	91	115	NR70
PFOA (Surrogate Recovery)		%	102	113	104	110	NR70
PFNA (Surrogate Recovery)		%	107	96	97	88	NR70
PFDA (Surrogate Recovery)		%	93	87	103	88	NR70
PFUdA (Surrogate Recovery)		%	83	89	116	84	NR70
PFDoA (Surrogate Recovery)		%	71	64	98	72	NR70
PFTeDA (Surrogate Recovery)		%	74	64	101	74	NR70
PFHxDA (Surrogate Recovery)		%	84	83	92	83	NR70
FOUEA (Surrogate Recovery)		%	82	93	85	84	NR70
PFBS (Surrogate Recovery)		%	93	101	84	95	NR70
PFHxS (Surrogate Recovery)		%	97	108	94	102	NR70
PFOS (Surrogate Recovery)		%	95	106	87	98	NR70
PFOSA (Surrogate Recovery)		%	64	70	97	71	NR70
N-MeFOSA (Surrogate Recovery)		%	50	51	68	52	NR70
N-EtFOSA (Surrogate Recovery)		%	41	50	78	50	NR70
N-MeFOSAA (Surrogate Recovery)		%	52	63	92	54	NR70
N-EtFOSAA (Surrogate Recovery)		%	64	78	119	70	NR70
N-MeFOSE (Surrogate Recovery)		%	77	50	79	70	NR70
N-EtFOSE (Surrogate Recovery)		%	65	53	53	43	NR70
4:2 FTS (Surrogate Recovery)		%	94	108	56	116	NR70
6:2 FTS (Surrogate Recovery)		%	80	80	62	87	NR70
8:2 FTS (Surrogate Recovery)		%	72	66	80	87	NR70
8:2 diPAP (Surrogate Recovery)		%	75	80	81	72	NR70
Dates							
Date extracted			28-APR-2021	28-APR-2021	28-APR-2021	28-APR-2021	
Date analysed			30-APR-2021	30-APR-2021	30-APR-2021	30-APR-2021	

N21/010444
to
N21/010459

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
High PFAS surrogate recoveries accepted - results corrected for recovery.
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

Organics - NSW
Accreditation No. 198

04-MAY-2021

REPORT OF ANALYSIS

Report No. RN1312932

Client	: [redacted]	**Job No.**	: AECO06/210423/2
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_2_1
		Date Received	: 23-APR-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: 60612563_2_1		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/010451	0207_QC245_210414	WATER 14/04/21
N21/010452	0207_QC246_210414	WATER 14/04/21
N21/010453	0207_QC247_210415	WATER 15/04/21
N21/010454	0207_QC248_210415	WATER 15/04/21

Lab Reg No.			N21/010451	N21/010452	N21/010453	N21/010454	
Date Sampled			14-APR-2021	14-APR-2021	15-APR-2021	15-APR-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	0.54	3.7	<0.05	<0.05	NR70
PFPeA (2706-90-3)		ug/L	1.6	16	<0.02	<0.02	NR70
PFHxA (307-24-4)		ug/L	1.1	8.3	0.017	<0.01	NR70
PFHpA (375-85-9)		ug/L	1.3	4.8	<0.01	<0.01	NR70
PFOA (335-67-1)		ug/L	0.56	3.6	0.019	<0.01	NR70
PFNA (375-95-1)		ug/L	0.12	0.72	<0.01	<0.01	NR70
PFDA (335-76-2)		ug/L	0.046	0.017	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	0.017	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)		ug/L	0.27	0.83	0.056	<0.01	NR70
PFHxS (355-46-4)		ug/L	1.6	4.4	0.40	<0.01	NR70
PFHpS (375-92-8)		ug/L	0.076	0.49	0.010	<0.01	NR70
PFOS (1763-23-1)		ug/L	2.6	6.4	0.42	<0.02	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)		ug/L	0.32	0.94	0.084	<0.01	NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.			N21/010451	N21/010452	N21/010453	N21/010454	
Date Sampled			14-APR-2021	14-APR-2021	15-APR-2021	15-APR-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	0.82	<0.01	<0.01	<0.01	NR70
8:2 FTS (39108-34-4)		ug/L	0.94	0.011	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	100	97	113	111	NR70
PFPeA (Surrogate Recovery)		%	103	53	111	111	NR70
PFHxA (Surrogate Recovery)		%	119	87	115	119	NR70
PFHpA (Surrogate Recovery)		%	110	96	110	103	NR70
PFOA (Surrogate Recovery)		%	114	102	107	111	NR70
PFNA (Surrogate Recovery)		%	88	89	91	106	NR70
PFDA (Surrogate Recovery)		%	88	88	99	105	NR70
PFUdA (Surrogate Recovery)		%	98	92	114	106	NR70
PFDoA (Surrogate Recovery)		%	99	81	94	94	NR70
PFTeDA (Surrogate Recovery)		%	102	95	93	92	NR70
PFHxDA (Surrogate Recovery)		%	112	126	102	96	NR70
FOUEA (Surrogate Recovery)		%	102	126	95	89	NR70
PFBS (Surrogate Recovery)		%	105	120	95	94	NR70
PFHxS (Surrogate Recovery)		%	102	106	103	100	NR70
PFOS (Surrogate Recovery)		%	109	106	96	101	NR70
PFOSA (Surrogate Recovery)		%	89	75	93	78	NR70
N-MeFOSA (Surrogate Recovery)		%	68	122	84	59	NR70
N-EtFOSA (Surrogate Recovery)		%	106	101	82	54	NR70
N-MeFOSAA (Surrogate Recovery)		%	78	74	94	76	NR70
N-EtFOSAA (Surrogate Recovery)		%	111	82	96	107	NR70
N-MeFOSE (Surrogate Recovery)		%	86	164	101	114	NR70
N-EtFOSE (Surrogate Recovery)		%	114	104	112	72	NR70
4:2 FTS (Surrogate Recovery)		%	59	78	61	64	NR70
6:2 FTS (Surrogate Recovery)		%	89	131	77	74	NR70
8:2 FTS (Surrogate Recovery)		%	95	85	85	91	NR70
8:2 diPAP (Surrogate Recovery)		%	94	108	88	75	NR70
Dates							
Date extracted			28-APR-2021	28-APR-2021	28-APR-2021	28-APR-2021	
Date analysed			30-APR-2021	30-APR-2021	30-APR-2021	30-APR-2021	

REPORT OF ANALYSIS

Lab Reg No.			N21/010451	N21/010452	N21/010453	N21/010454	
Date Sampled			14-APR-2021	14-APR-2021	15-APR-2021	15-APR-2021	
		Units					Method

[redacted]

[redacted]

Organics - NSW
Accreditation No. 198

04-MAY-2021

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/210423/2
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_2_1
		Date Received	: 23-APR-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: 60612563_2_1		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/010455	0207_QC250_210416	WATER 16/04/21
N21/010456	0207_QC251_210417	WATER 17/04/21
N21/010457	0207_QC252_210419	WATER 19/04/21
N21/010458	0207_QC253_210419	WATER 19/04/21

Lab Reg No.			N21/010455	N21/010456	N21/010457	N21/010458	
Date Sampled			16-APR-2021	17-APR-2021	19-APR-2021	19-APR-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	0.22	2.5	<0.05	0.27	NR70
PFPeA (2706-90-3)		ug/L	0.25	2.9	<0.02	0.29	NR70
PFHxA (307-24-4)		ug/L	1.3	12	<0.01	1.2	NR70
PFHpA (375-85-9)		ug/L	0.19	2.6	<0.01	0.20	NR70
PFOA (335-67-1)		ug/L	0.28	5.1	<0.01	0.42	NR70
PFNA (375-95-1)		ug/L	<0.01	0.013	<0.01	<0.01	NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)		ug/L	0.42	6.1	<0.01	0.84	NR70
PFHxS (355-46-4)		ug/L	2.4	34	<0.01	6.3	NR70
PFHpS (375-92-8)		ug/L	0.16	2.0	<0.01	0.40	NR70
PFOS (1763-23-1)		ug/L	2.7	37	<0.02	7.8	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)		ug/L	0.53	7.3	<0.01	0.84	NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.			N21/010455	N21/010456	N21/010457	N21/010458	
Date Sampled			16-APR-2021	17-APR-2021	19-APR-2021	19-APR-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	<0.01	0.12	<0.01	<0.01	NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	101	100	98	117	NR70
PFPeA (Surrogate Recovery)		%	89	97	92	98	NR70
PFHxA (Surrogate Recovery)		%	77	61	97	101	NR70
PFHpA (Surrogate Recovery)		%	94	105	96	102	NR70
PFOA (Surrogate Recovery)		%	97	87	107	107	NR70
PFNA (Surrogate Recovery)		%	94	93	105	93	NR70
PFDA (Surrogate Recovery)		%	100	98	92	97	NR70
PFUdA (Surrogate Recovery)		%	100	93	88	100	NR70
PFDoA (Surrogate Recovery)		%	96	93	75	85	NR70
PFTeDA (Surrogate Recovery)		%	89	93	77	96	NR70
PFHxDA (Surrogate Recovery)		%	94	121	81	103	NR70
FOUEA (Surrogate Recovery)		%	79	101	82	81	NR70
PFBS (Surrogate Recovery)		%	84	85	91	96	NR70
PFHxS (Surrogate Recovery)		%	85	68	99	83	NR70
PFOS (Surrogate Recovery)		%	99	98	114	115	NR70
PFOSA (Surrogate Recovery)		%	86	80	75	84	NR70
N-MeFOSA (Surrogate Recovery)		%	65	89	57	80	NR70
N-EtFOSA (Surrogate Recovery)		%	67	109	52	63	NR70
N-MeFOSAA (Surrogate Recovery)		%	88	87	71	83	NR70
N-EtFOSAA (Surrogate Recovery)		%	85	83	68	88	NR70
N-MeFOSE (Surrogate Recovery)		%	73	94	72	67	NR70
N-EtFOSE (Surrogate Recovery)		%	113	127	64	83	NR70
4:2 FTS (Surrogate Recovery)		%	51	66	120	61	NR70
6:2 FTS (Surrogate Recovery)		%	65	79	78	75	NR70
8:2 FTS (Surrogate Recovery)		%	77	70	79	67	NR70
8:2 diPAP (Surrogate Recovery)		%	81	115	67	84	NR70
Dates							
Date extracted			28-APR-2021	28-APR-2021	28-APR-2021	28-APR-2021	
Date analysed			30-APR-2021	30-APR-2021	30-APR-2021	30-APR-2021	

REPORT OF ANALYSIS

Lab Reg No.			N21/010455	N21/010456	N21/010457	N21/010458	
Date Sampled			16-APR-2021	17-APR-2021	19-APR-2021	19-APR-2021	
		Units					Method

[redacted]

[redacted]

Organics - NSW
Accreditation No. 198

04-MAY-2021

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/210423/2
	L[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_2_1
		Date Received	: 23-APR-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: 60612563_2_1		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/010459	0207_QC254_210419	WATER 19/04/21

Lab Reg No.			N21/010459				
Date Sampled			19-APR-2021				
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	<0.05				NR70
PFPeA (2706-90-3)		ug/L	<0.02				NR70
PFHxA (307-24-4)		ug/L	0.038				NR70
PFHpA (375-85-9)		ug/L	0.013				NR70
PFOA (335-67-1)		ug/L	0.022				NR70
PFNA (375-95-1)		ug/L	<0.01				NR70
PFDA (335-76-2)		ug/L	<0.01				NR70
PFUdA (2058-94-8)		ug/L	<0.01				NR70
PFDoA (307-55-1)		ug/L	<0.01				NR70
PFTrDA (72629-94-8)		ug/L	<0.02				NR70
PFTeDA (376-06-7)		ug/L	<0.02				NR70
PFHxDA (67905-19-5)		ug/L	<0.02				NR70
PFODA (16517-11-6)		ug/L	<0.05				NR70
FOUEA (70887-84-2)		ug/L	<0.01				NR70
PFDS (335-77-3)		ug/L	<0.01				NR70
PFPeS (2706-91-4)		ug/L	0.039				NR70
PFHxS (355-46-4)		ug/L	0.23				NR70
PFHpS (375-92-8)		ug/L	0.013				NR70
PFOS (1763-23-1)		ug/L	0.20				NR70
PFNS (68259-12-1)		ug/L	<0.01				NR70
PFBS (375-73-5)		ug/L	0.049				NR70
PFOSA (754-91-6)		ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)		ug/L	<0.05				NR70
4:2 FTS (757124-72-4)		ug/L	<0.01				NR70
6:2 FTS (27619-97-2)		ug/L	<0.01				NR70

REPORT OF ANALYSIS

Lab Reg No.			N21/010459				
Date Sampled			19-APR-2021				
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
8:2 FTS (39108-34-4)		ug/L	<0.01				NR70
10:2 FTS (120226-60-0)		ug/L	<0.01				NR70
8:2 diPAP (678-41-1)		ug/L	<0.02				NR70
PFBA (Surrogate Recovery)		%	112				NR70
PFPeA (Surrogate Recovery)		%	109				NR70
PFHxA (Surrogate Recovery)		%	104				NR70
PFHpA (Surrogate Recovery)		%	104				NR70
PFOA (Surrogate Recovery)		%	114				NR70
PFNA (Surrogate Recovery)		%	115				NR70
PFDA (Surrogate Recovery)		%	114				NR70
PFUdA (Surrogate Recovery)		%	117				NR70
PFDoA (Surrogate Recovery)		%	111				NR70
PFTeDA (Surrogate Recovery)		%	114				NR70
PFHxDA (Surrogate Recovery)		%	108				NR70
FOUEA (Surrogate Recovery)		%	81				NR70
PFBS (Surrogate Recovery)		%	95				NR70
PFHxS (Surrogate Recovery)		%	107				NR70
PFOS (Surrogate Recovery)		%	110				NR70
PFOSA (Surrogate Recovery)		%	104				NR70
N-MeFOSA (Surrogate Recovery)		%	69				NR70
N-EtFOSA (Surrogate Recovery)		%	85				NR70
N-MeFOSAA (Surrogate Recovery)		%	91				NR70
N-EtFOSAA (Surrogate Recovery)		%	129				NR70
N-MeFOSE (Surrogate Recovery)		%	86				NR70
N-EtFOSE (Surrogate Recovery)		%	112				NR70
4:2 FTS (Surrogate Recovery)		%	60				NR70
6:2 FTS (Surrogate Recovery)		%	75				NR70
8:2 FTS (Surrogate Recovery)		%	93				NR70
8:2 diPAP (Surrogate Recovery)		%	86				NR70
Dates							
Date extracted			28-APR-2021				
Date analysed			30-APR-2021				

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Organics - NSW
Accreditation No. 198

04-MAY-2021

[redacted]

REPORT OF ANALYSIS

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

This Report supersedes reports: *RN1312929*

Measurement Uncertainty is available upon request.
Chemical Accreditation 198: [redacted]

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/210423/2 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	103	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	90	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	96	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	88	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	89	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	96	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	93	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	92	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	88	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	96	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	93	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	90	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	92	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	92	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	98	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	95	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	90	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	89	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	104	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	78	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	99	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	100	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	91	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	94	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	94	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date: **4/05/2021**

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/210423/2 **Sample Matrix:** Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
				N21/010445				
PFBA (375-22-4)	NR70	0.002	<0.002	<0.002	<0.002	-	118	91
PFPeA (2706-90-3)	NR70	0.002	<0.002	<0.002	<0.002	-	96	95
PFHxA (307-24-4)	NR70	0.001	<0.001	<0.001	<0.001	-	96	86
PFHpA (375-85-9)	NR70	0.001	<0.001	<0.001	<0.001	-	96	92
PFOA (335-67-1)	NR70	0.001	<0.001	<0.001	<0.001	-	93	85
PFNA (375-95-1)	NR70	0.001	<0.001	<0.001	<0.001	-	90	104
PFDA (335-76-2)	NR70	0.001	<0.001	<0.001	<0.001	-	100	95
PFUdA (2058-94-8)	NR70	0.002	<0.002	<0.002	<0.002	-	95	87
PFDoA (307-55-1)	NR70	0.002	<0.002	<0.002	<0.002	-	98	99
PFTrDA (72629-94-8)	NR70	0.002	<0.002	<0.002	<0.002	-	98	89
PFTeDA (376-06-7)	NR70	0.002	<0.002	<0.002	<0.002	-	82	94
PFHxDA (67905-19-5)	NR70	0.002	<0.002	<0.002	<0.002	-	101	99
PFODA (16517-11-6)	NR70	0.005	<0.005	<0.005	<0.005	-	106	99
FOUEA (70887-84-2)	NR70	0.001	<0.001	<0.001	<0.001	-	100	103
PFBS (375-73-5)	NR70	0.001	<0.001	<0.001	<0.001	-	107	102
PFPeS (2706-91-4)	NR70	0.001	<0.001	<0.001	<0.001	-	107	102
PFHxS (355-46-4)	NR70	0.001	<0.001	<0.001	<0.001	-	96	94
PFHpS (375-92-8)	NR70	0.001	<0.001	<0.001	<0.001	-	91	92
PFOS (1763-23-1)	NR70	0.002	<0.002	<0.002	<0.002	-	124	90
PFNS (68259-12-1)	NR70	0.001	<0.001	<0.001	<0.001	-	105	94
PFDS (335-77-3)	NR70	0.001	<0.001	<0.001	<0.001	-	98	94
PFOSA (754-91-6)	NR70	0.001	<0.001	<0.001	<0.001	-	94	101
N-MeFOSA (31506-32-8)	NR70	0.002	<0.002	<0.002	<0.002	-	107	117
N-EtFOSA (4151-50-2)	NR70	0.002	<0.002	<0.002	<0.002	-	114	131
N-MeFOSAA (2355-31-9)	NR70	0.002	<0.002	<0.002	<0.002	-	97	86
N-EtFOSAA(2991-50-6)	NR70	0.002	<0.002	<0.002	<0.002	-	107	78
N-MeFOSE (24448-09-7)	NR70	0.005	<0.005	<0.005	<0.005	-	64	100
N-EtFOSE (1691-99-2)	NR70	0.005	<0.005	<0.005	<0.005	-	112	69
4:2 FTS (757124-72-4)	NR70	0.001	<0.001	<0.001	<0.001	-	100	106
6:2 FTS (27619-97-2)	NR70	0.001	<0.001	<0.001	<0.001	-	114	109
8:2 FTS (39108-34-4)	NR70	0.001	<0.001	<0.001	<0.001	-	88	98
10:2 FTS (120226-60-0)	NR70	0.002	<0.002	<0.002	<0.002	-	86	102
8:2 diPAP (678-41-1)	NR70	0.002	<0.002	<0.002	<0.002	-	100	105

Results expressed in percentage (%) or mg/kg wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date: **4/05/2021**

[redacted]

Appendix F

Equipment Calibration Certificates

Appendix F Equipment Calibration Certificates

Oil / Water Interface Meter

Instrument Solinst Interface Meter (100M)
Serial No. 313385

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
	above 8 V	✓	
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]

Test date: **6/04/2021**

Next Test due: **3/10/2021**

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 20M100103

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 7.00	**NIST**	364212	pH 7.02
2. pH 4.00		pH 4.00	**NIST**	362201	pH 3.98
3. mV		ORP	**NIST**	364217/362918	227mV
4. EC		2760uS	**NIST**	343511	2631uS
6. D.O		0%	**NIST**	10959	0%
7. Temp		21C	**NIST**	Testo Mini 901	21C

Calibrated by: [redacted]

Calibration date: 8/04/2021

Next calibration due: 8/10/2021

Multi Parameter Water Meter

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument YSI Quatro Pro Plus
Serial No. 20M101181

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**	364212	pH 7.01
2. pH 4.00		pH 4.00	**NIST**	362201	pH 4.01
3. mV		238	**NIST**	364644/363903	238mV
4. EC		2760uS	**NIST**	343511	2533uS
6. D.O		0%	**NIST**	10959	0%
7. Temp		21C	**NIST**	Testo Mini 901	20.7C

Calibrated by: [redacted]

Calibration date: **27/04/2021**

Next calibration due: **27/10/2021**

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP AACO	**Project Number:**	60612563 2.1
Project Location:	AACO	**Client:**	DoD
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
Serial Number:	20A100103

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	12/04				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	~~ppm~~ mg/L	ppm
Calibration Standard Concentration:	7	4	2760	0	
Calibration Reading:	7.00	3.99	2774	0.01	
Calibration Temperature:	17.6	19.5	18.7	19.1	

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**

12/04 — **Date**

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP AACO	**Project Number:**	60612563 2.1
Project Location:	AACO	**Client:**	DoD
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 Plus
Serial Number:	20M100103

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	13/04				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	7	4	2760	0	
Calibration Reading:	7.01	3.99	2773	0.01	
Calibration Temperature:	11.5	11.9	10.3	10.2	

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**

13/04 — **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP AACO	**Project Number:**	60612563 2.1
Project Location:	AACO	**Client:**	DoD
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 Plus
Serial Number:	20M100103

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	14/04				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	7	4	2760	0	
Calibration Reading:	7.0	4.01		0	
Calibration Temperature:	12.2	~~12.3~~ 12.3	12.9	12.7	

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

14/4
Date

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP AACO	**Project Number:**	60612563 2.1
Project Location:	AACO	**Client:**	DoD
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
Serial Number:	20m 100103

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	7	4	2766	0	
Calibration Reading:	7.00	4.01	2758	0.0	
Calibration Temperature:	13.3	13.9	13.7	13.7	

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

15/4.

Date

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP AACO	**Project Number:**	60612563 2.1
Project Location:	AACO	**Client:**	DoD
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
Serial Number:	20A100103

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	4	7	2760	0	
Calibration Reading:	3.99	7.02	2771	0.0	
Calibration Temperature:	16.0	16.1	16.2	16.2	

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**

[redacted] — **Date**

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP AACO	**Project Number:**	60612563 2.1
Project Location:	AACO	**Client:**	DoD
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
Serial Number:	20m100103

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	7	4	2760	0	
Calibration Reading:	7.00	4.01	2755	0.0	
Calibration Temperature:	16.3	16.9	16.7	16.4	

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 instrum[redacted]d calibrated daily and bump tested as required by fieldwork staff.

[redacted] — **Fieldwork Staff Signature**

17/4 — **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP AACO	**Project Number:**	60612563 2.1
Project Location:	AACO	**Client:**	DoD
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:	Aramet
Make and Model:	YSI Pro
Serial Number:	20M100103

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	4	7	2760	0	
Calibration Reading:	4.0		2757	0.0	
Calibration Temperature:	11.6	11.3	11.7	11.4	

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**

19/4 — **Date**

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP AACO	**Project Number:**	60612563 2.1
Project Location:	AACO	**Client:**	DoD
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:	HI 4m
Serial Number:	20m000103

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	4	7	2760	0.0	
Calibration Reading:	4.01	7.02	2749	0.0	
Calibration Temperature:	13.7	13.5	13.2	13.1	

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

20/4

Date

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP AACO	**Project Number:**	60612563 2.1
Project Location:	AACO	**Client:**	DoD
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
Serial Number:	20A100103

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	4	7.0	2760	0.0	
Calibration Reading:	4.01	7.01	2773	0.0	
Calibration Temperature:	10.3	10.6	10.9	10.7	

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**

21/4 — **Date**

Distribution: Project Central File

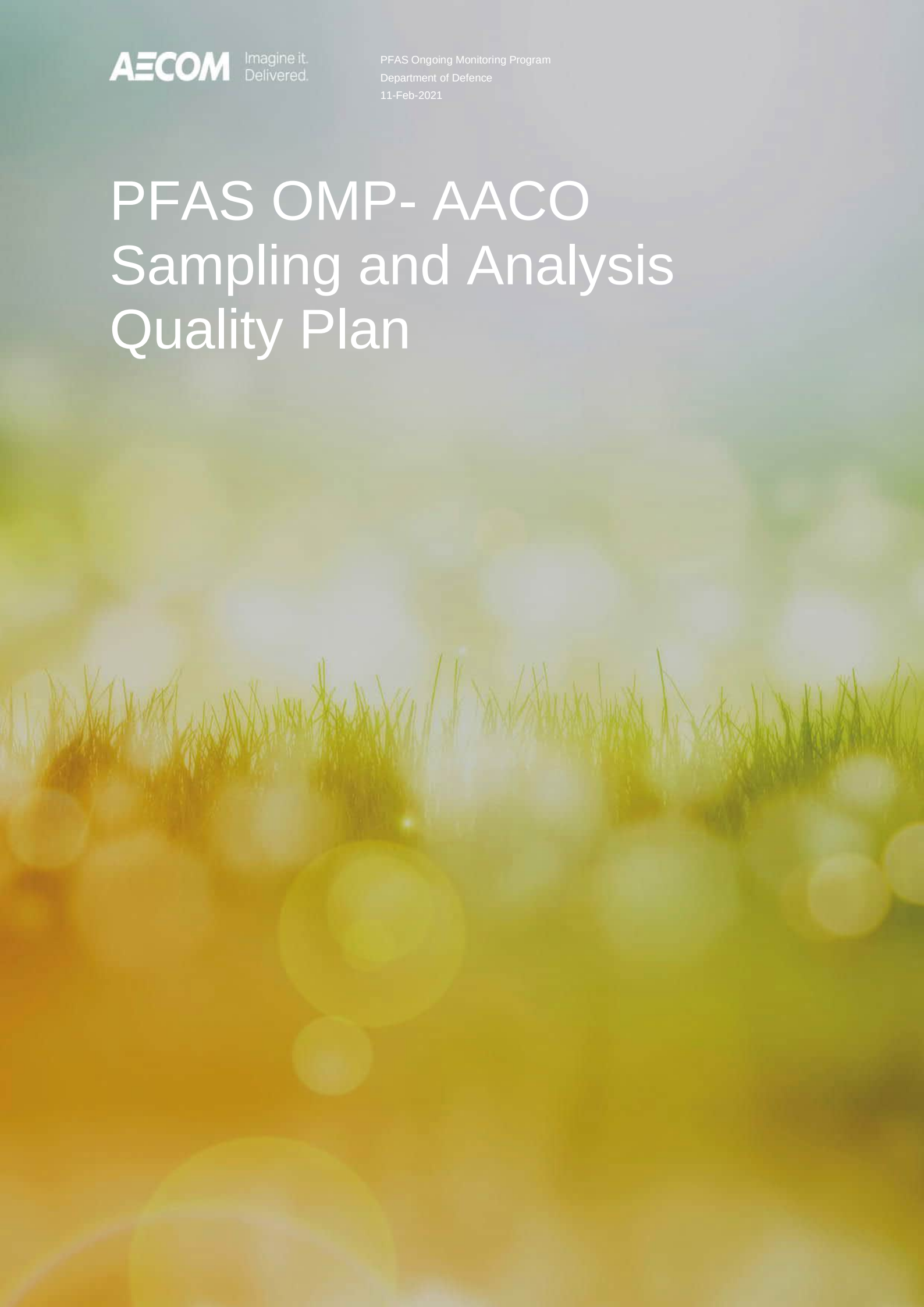
Appendix E

Sampling and Analysis Quality Plan

AECOM Imagine it. Delivered.

PFAS Ongoing Monitoring Program
Department of Defence
11-Feb-2021

PFAS OMP- AACO Sampling and Analysis Quality Plan



PFAS OMP- AACO Sampling and Analysis Quality Plan

Client: Department of Defence

ABN: 68 706 814 312

Prepared by

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street, PO Box 1307, Fortitude Valley QLD 4006, Australia
T +61 7 3553 2000 F +61 7 3553 2050 www.aecom.com
ABN 20 093 846 925

11-Feb-2021

Job No.: 60612563

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 AS/NZS4801 and OHSAS18001.

Quality Information

Document PFAS OMP- AACO Sampling and Analysis Quality Plan

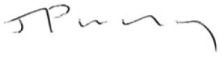
Ref 60612563

Date 11-Feb-2021

Prepared by Emma Rogers

Reviewed by James Peachey

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	11-Oct-2019	Draft	Frances Lee Project Director	
B	18-Oct-2019	Draft	Frances Lee Project Director	
0	3 March 2020	Final	Frances Lee Project Director	
1	07 September 2020	Final	Frances Lee Project Director	
2	11 February 2021	Final	James Peachey Project Manager	

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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 the **Army Aviation Centre Oakey (AACO)** (the 'site') and the **AACO Management Area** in the **South Queensland Region**. The SAQP also includes a satellite site of AACO (Brymaroo Satellite Site, hereafter Brymaroo) located approximately 22 km northwest of the AACO.

The SAQP supports the *PFAS Ongoing Monitoring Plan (OMP)* which was included in the AACO PFAS Management Area Plan (PMAP) (Defence, 2019), here-in referred to as OMP.

The purpose of the OMP program is to collect data that will enable Defence to maintain an up to date understanding of the distribution, concentration, transport (migration pathways and flow) and transformation of PFAS at the site and AACO Management Area. The data will assist in the timely identification of risks and inform Defence's approach to the management of PFAS, including updates and revisions to the PFAS Management Area Plan (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 (QAQC) measures to be adopted
- 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 (Defence, 2019):

- Annual comprehensive sampling event in April 2020, April 2021 and April 2022 including:
  - groundwater sampling of 47 on-site groundwater monitoring wells (34 at AACO and 13 at Brymaroo) and 53 off-site groundwater monitoring wells and bores
  - co-located sediment and surface water sampling at six on-site and 16 off-site sampling locations
- Targeted sampling event in October 2019, October 2020 and October 2021 including groundwater sampling of 34 on-site groundwater monitoring wells (at AACO) and 15 off-site groundwater monitoring wells and bores.
- Preparation of reports including a sampling event factual report (following each comprehensive and targeted sampling event) and annual interpretative reports following the completion of each 12-month sampling period.

1.4 Guidelines and Legislation

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

- PFAS National Environmental Management Plan (NEMP), Heads of Environmental Protection Agencies (HEPA), 2020
- National Environment Protection (Assessment of Site Contamination) Measure (NEPM), National Environment Protection Council (NEPC), 2013
- Department of Defence, Routine Environment Water Quality Monitoring Manual, 2016

- Department of Defence, Contamination Management Manual, 2018 amended August 2019
- Department of Health, Health Based Guidance Values for PFAS for use in site investigations in Australia. 2019
- National Health and Medical Research Council (NHMRC), Guidance on PFAS in Recreational Water. August 2019
- Standards Australia 1998. 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 Policy, (Water and Wetland Biodiversity), 2019.

2.0 Site Identification and Conceptual Site Model

2.1 The Base and Management Area

AACO was constructed in 1943, initially as a training facility and overflow aircraft maintenance depot for RAAF Base Amberley. The Site currently operates as the Army's helicopter training school for pilots and aviation technicians and is also home to a Republic of Singapore Airforce helicopter squadron. The northern part of AACO is the airfield, while the southern part of AACO comprises support services, buildings and infrastructure. Approximately 290 hectares of the Site are leased for agriculture in the western portion of AACO.

The Brymaroo site is approximately 266 hectares in size and is used for training in emergency landings and fire hazard training. AFFF containers are present for use in emergencies. No known training exercises using AFFF are known. The key objective of an environmental investigation conducted between 2016 and 2018 was to characterise potential environmental impacts from the historical use of AFFF.

The AACO Management Area was established in 2017 and comprises three zones:

- **Management Zone 1:** this zone is located immediately to the south and southwest of AACO. It has the highest perfluorooctanesulfonic acid (PFOS) + perfluorohexanesulfonic acid (PFHxS) concentrations in groundwater in the Management Area given its closer proximity to the AACO and potential downwards migration of PFAS from surface water in drainage channels 1 and 2.
- **Management Zone 2:** this zone is located further to the south and southwest of the AACO. It has higher PFOS+PFHxS concentrations in groundwater in comparison with Management Zone 3 as a result of a combination of impacted groundwater flowing to the south and west from the Site together with downwards migration of PFAS-impacted surface water from the drains leaving the Site.
- **Management Zone 3:** located outside Management Zone 1 and Zone 2 and within the remainder of the Management Area. PFAS was not detected by the laboratory in the majority of groundwater samples collected from groundwater monitoring bores in this Management Zone.

Defence has issued precautionary advice for residents within each management zone.

2.2 Conceptual Site Model

The conceptual site models (CSM) for AACO and Brymaroo are presented in detail in the OMP (Defence, 2019) which summarises the linkages between sources, pathways and receptors.

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 1 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.

Defence required an understanding of the holistic effect of PFAS management response activities that have and will be implemented.

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- and off-site. This will facilitate refinement of the CSM, 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 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
- understand if the nature, extent and magnitude of PFAS concentrations has changed significantly to warrant a revision to the human health and environmental risk assessments
- understand if the nature, extent and magnitude of PFAS concentrations have changed significantly to warrant refinement of any existing management measures.

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:

- PFAS results from previous investigations
- meteorological data including rainfall
- previous and new data collected during the residential sampling program where permission to use the data has been granted by landowners
- groundwater, surface water and sediment data collected and analysed for PFAS, as part of the SAQP
- groundwater and surface water elevation data
- statistical analysis to identify trends
- advances in laboratory analytical approaches and changes in regulatory requirements.

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 site, the Management Area and Brymaroo (refer to **Appendix A**)
- The sampling completed as part of the SAQP includes groundwater, surface water and sediment, at the frequencies defined in **Section 4.3**. In addition, ad hoc sampling for biota may also be required
- The monitoring will be long term (beyond three years) and potentially ongoing.

The SAQP will also cover the primary implementation period of the OMP (Defence, 2019). The SAQP will also cover the extended implementation period to 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 LOR in the various media to be analysed.
- 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 will be required.
- If the PFAS is reported at a concentration that is above drinking water guideline in groundwater, then it will be considered that further assessment is required and / or notification.
- If the 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 two 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.

3.1.6 Step 6 – Specify Performance or Acceptance Criteria

Specific limits for the works included in the OMP (Defence, 2019) 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 site. 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.
- Limitations in ability to acquire useful and representative information from the data collected. The data are proposed to be collected from multiple locations and sample media. Some examples of this scenario include:
    - Some of the data are proposed to be collected from landholder bores, which are not purpose-built for groundwater monitoring. In some cases, there is limited information on the bore construction, and the likely presence of dedicated pumps or windmills may prevent groundwater depths being accurately recorded while also preventing groundwater being sampled using low flow techniques.

- 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.
    - Laboratories to report quality assurance/ quality control data for comparison with the DQIs established for the SAQP.

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 (July 2018, Amended August 2019), *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
- 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 2**.

Table 2 Acceptance Criteria for Data Quality Indicators for Sample Analysis

Data Quality Indicators	Acceptance Criteria
Water and Sediment Samples	
Rinsates (where sampling equipment is reused)	Less than the laboratory LOR.
Field duplicates/Inter-lab duplicates	The RPDs 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 (Defence, 2019) presents an overview of specific monitoring works to be undertaken and provides the basis for the preparation of this SAQP. This scope of works presented in this SAQP is consistent with that detailed in the OMP[1] (Defence, 2019), with the exception of those points of deviation presented in **Section 4.15**.

4.2 Proposed Schedule

4.2.1 Sampling Events

Groundwater, surface water and sediment sampling from across the Management Area will be performed biannually as part of a comprehensive sampling event in April and a targeted sampling event in October for an initial period of three years, with the initial targeted sampling event scheduled to be completed in October 2019.

The proposed schedule of fieldworks across the initial three-year period is presented in **Table 3** below.

Table 3 Proposed Fieldwork Schedule

Sampling Round No.	Description of works	Proposed Schedule
1	Targeted groundwater sampling	October 2019
2	Comprehensive groundwater, surface water and sediment sampling	April 2020
3	Targeted groundwater sampling	October 2020
4	Comprehensive groundwater, surface water and sediment sampling	April 2021
5	Targeted groundwater sampling	October 2021
6	Comprehensive groundwater, surface water and sediment sampling	April 2022

4.3 Sample Location Rationale

4.3.1 Groundwater Sampling Locations

Groundwater monitoring will be undertaken on selected monitoring wells and residential bores. The rationale for monitoring well selection for each area is summarised in **Table 4** below.

[1] Note that the sampling locations included in the annual comprehensive sampling event and the targeted sampling event have been revised since the PMAP was issued. This is documented in Section 4.15.

Table 4 Rationale for Groundwater Monitoring Locations

Area	Rationale
On-Site (Oakey Creek Alluvium Aquifer)	• Monitor spatial and temporal variations in PFAS concentrations in groundwater concentrations up, down and cross-gradient of source areas • Assess if groundwater PFAS concentrations in bores down-gradient of the source areas change in response to management measures over time
Off-Site: south of site down-hydraulic gradient of drainage channels and Oakey Creek in the Oakey Creek Alluvium aquifer	• Monitor spatial and temporal variations in PFAS concentration in the groundwater down-gradient of drainage channels and Oakey Creek • Assess if groundwater PFAS concentrations in bores to the south of the Site change in response to management measures over time • Continue to monitor groundwater bores with existing temporal datasets to assist with better understanding of temporal patterns in PFAS concentrations • Monitor groundwater adjacent to Oakey Creek to assess PFAS migrating from the drainage channels and Oakey Creek to groundwater • Monitor groundwater parallel and perpendicular to the PFAS plume to assist with understanding concentrations changes in these alignments.
Off-Site: south-west of the site up- and down- hydraulic gradient of the landfill in the Oakey Creek Alluvium aquifer	• Monitor spatial and temporal variations in PFAS concentration in the groundwater up- and down gradient of the landfill • Assess if groundwater PFAS concentrations in bores to the south-west of the Site change in response to management measures over time • Monitor groundwater parallel and perpendicular to the PFAS plume to assist with understanding concentrations changes in these alignments.
Off-Site: west and south-west of the site in the Oakey Creek Alluvium aquifer	• Monitor potential changes in PFAS concentrations at the plume margins to the west and south west of the Site to refine model predictions • Assess if groundwater PFAS concentrations in bores to the west and south-west of the Site change in response to management measures over time • To provide an indication if additional management measures are required for groundwater users outside the current area of PFAS contamination in groundwater • Continue to monitor groundwater bores with existing temporal datasets to assist with better understanding of temporal patterns in PFAS concentrations • Monitor groundwater parallel and perpendicular to the PFAS plume to assist with understanding concentrations changes in these alignments.
Off-site: within underlying aquifer units (Main Range Volcanics and Walloon Coal Measures) at locations the south, southwest and west of the site.	• Monitor groundwater PFAS concentrations in underlying aquifers to assess potential vertical migration of PFAS into underlying aquifers at vulnerable locations, including areas where bores have been constructed to previous standards, irrigation return flow and flooding • Monitor potential changes in PFAS concentrations to provide up to date information to users of the underlying aquifer and to refine model predictions

Area	Rationale
	• Continue to monitor groundwater bores with existing temporal datasets to assist with better understanding of temporal patterns in PFAS concentrations.
Brymaroo (Main Range Volcanics aquifer)	• Monitor spatial and temporal variations in PFAS concentration in groundwater • Continue to monitor groundwater bores with existing temporal datasets to assist with better understanding of temporal patterns in PFAS concentrations.

Note: Off-site residential sampling locations will require the agreement of the landholder/leaseholder.

4.3.2 Groundwater Sampling Locations

The groundwater locations to be monitored as part of the annual comprehensive sampling event and targeted sampling event are provided **Table 5** below and are presented in **Figure 1** (On-Site), **Figure 2** (Off-Site) and **Figure 4** (Brymaroo) in **Appendix A**. Sample identity numbers have been changed in 2019 to be compliant with DCMM. A table showing historical and current sample identification numbers is presented in **Appendix C**.

Table 5 Groundwater sampling locations

Location		Event	Bores	No. of locations	
				Annual April	Targeted October
On-site					
Source Area Bores	Fire training area in North	A & T	MW253, MW254	2	2
	Former fire station in B3	A & T	MW201, MW202, MW203, MW204, MW205	5	5
	AFFF Storage Area / D20 appliance testing area	A & T	MW221, MW222, MW230, MW232	4	4
	AFFF recovery tank in F1 / hot refuel area	A & T	MW235, MW236, MW241	3	3
	AFFF recovery tank in A2 / hot refuel area	A & T	MW172, MW173	2	2
	AFFF recovery tank in S1	A & T	MW299, MW300	2	2
	AFFF Settling tank in C1	A & T	MW193, MW198, MW206, MW223, MW229	5	5
On-Site Boundary Bores (Oakey Creek Alluvium)		A & T	MW167, MW174, MW178, MW179, MW187, MW189, MW233, MW242, MW245, MW249, MW252	11	11
Off-site					
Off-Site Background Bores (to east/ southeast of Site)		A	MW265, MW279	2	0
South of Site and down gradient of drainage channels and Oakey Creek		A	MW267, MW268, MW270, MW278, MW292, MW294, *MW020, MW032, MW031, MW132*	10	0
Up and down gradient of landfill		A	MW280, MW281, MW282	3	0

Location	Event	Bores	No. of locations	
			Annual April	Targeted October
West and southwest of Site	A	MW255, MW257, MW262, MW264, MW266, MW272, MW274, MW276, MW283, MW285, MW296, *MW003, MW019, MW021, MW022, MW038, MW056, MW113, MW114, MW118, MW122, MW132, MW147, MW149, MW151, MW157, MW160*	27	0
	T	MW255, MW257, MW262, MW264, MW276, MW272, *MW003, MW019, MW022, MW038, MW084, MW134, MW147, MW151*	0	14
Underlying aquifers (to south, south-west and west of Site)	A	MW271, MW275, MW288, MW269, MW273, MW289, MW290, MW291, MW293, MW295, MW297	11	0
	T	MW269	0	1
Brymaroo				
On-Site Bores	A	MW001, MW002, MW003, MW004, MW005, MW006, MW007, MW008, MW009, MW010, MW011, MW012, MW013	13	0

Note: *Italics* indicates residential bore
A = Annual, T = Targeted

4.3.3 Surface Water Sampling Locations

The surface water sampling locations have been selected to build upon and maintain consistency with the monitoring completed during the Stage 2C EI. The locations have been previously sampled several times, and continued monitoring will provide additional data to assess temporal variability. The locations to be monitored as part of the annual comprehensive sampling event (April) are provided in **Table 6** below and are presented on **Figure F3** in **Appendix A**. A table showing historical and current sample identification numbers is presented in **Appendix C**.

Table 6 Surface Water Sampling Locations

Area	Description	Sampling Locations	Number of Locations	Total
Creek	Oakey Creek upstream of drainage channel 3 outfall	SW032, SW040	2	11 locations
	Oakey Creek (downstream of confluence with Westbrook Creek (includes weir))	SW010, SW011, SW012, SW013, SW056	5	
	Oakey Creek (downstream confluence with Westbrook Creek)	SW004, SW059	2	
	Doctor Creek	SW043	1	
	Westbrook Creek	SW028	1	
Drainage Channel	Drainage Channel 1 (On-Site)	SW065, SW066	2	11 locations
	Drainage Channel 1 (Off-Site)	SW026	1	
	Drainage Channel 2 (On-Site)	SW024, SW025	2	
	Drainage Channel 2 (Off-Site)	SW009, SW027	2	
	Drainage Channel 3 (On-Site)	SW019, SW021, SW063	3	
	Drainage Channel 3 (Off-Site)	SW057	1	

4.3.4 Sediment Sampling Locations

The sediment sampling locations have been selected to build upon and maintain consistency with the monitoring completed during the Stage 2C environmental investigation (AECOM, 2017) and are co-located with the surface water sampling locations. Many of the locations have been previously sampled several times, and continued monitoring will provide additional data to assess temporal variability. The locations to be monitored as part of the annual comprehensive sampling event (April) are provided in **Table 7** below. A table showing historical and current sample identification numbers is presented in **Appendix C**.

Table 7 Sediment Sample Locations

Area	Description	Sampling Locations	Number of Locations	Total
Creek	Oakey Creek upstream of drainage channel 3 outfall	SD032, SD040	2	11 locations
	Oakey Creek (downstream of confluence with Westbrook Creek (includes weir))	SD037, SD036, SD0105, SD102, SD018	5	
	Oakey Creek (downstream confluence with Westbrook Creek)	SD038, SD045	2	
	Doctor Creek	SD007	1	
	Westbrook Creek	SD070	1	
Drainage Channel	Drainage Channel 1 (On-Site)	SD106, SD022	2	11 locations
	Drainage Channel 1 (Off-Site)	SD015	1	
	Drainage Channel 2 (On-Site)	SD024, SD010	2	
	Drainage Channel 2 (Off-Site)	SD013, SD011	2	
	Drainage Channel 3 (On-Site)	SD016, SD025, SD107	3	
	Drainage Channel 3 (Off-Site)	SD017	1	

4.4 Sample Collection and Handling

4.4.1 Groundwater Sampling

The groundwater sampling methodology and schedule are presented in **Table 8**.

Table 8 Groundwater Sampling Methodology and Schedule

Item	Details
Groundwater gauging	The depth to groundwater will be measured in each monitoring well immediately prior to collection of groundwater samples.
Sample Collection Methodology	**Shallow Bores in Oakey Creek Alluvium and Deeper Bores installed in Main Range Volcanics and Walloon Coal Measures** Groundwater samples will be collected from all monitoring wells using no-purge methodology HydraSleeves™, which will be installed within the screened interval of the wells (approximately 1 m above the base of the well) for a minimum of 24 hours prior to the sampling round. Once sampling is completed, new HydraSleeves™ will be deployed at the screened interval depth in preparation for the next sampling round. **Residential Bores** Bore water samples will be collected by placing the laboratory provided sample bottle beneath the tap outlet and the tap slowly opened to collect the “first flush” of water.
QA/QC Samples to be Collected	Field QA/QC samples are to include intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits) and equipment rinsate blank (rinsate) samples. Duplicate samples are to be collected at a minimum frequency of 1 in 10 primary samples. Rinsate samples are to be collected at a rate of one sample per fieldwork day by pouring laboratory supplied PFAS free deionised water over the decontaminated sampling equipment.
Field Parameters	Temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation-reduction potential (ORP), pH and observations of water quality will be recorded for all samples.
Sample Analysis	All primary samples will be submitted for PFAS extended suite using the standard levels of detection.
Sampling Schedule	The monitoring at AACO will include two monitoring events, as detailed below: **Annual Comprehensive:** 100 monitoring wells and residential bores have been selected for the annual comprehensive sampling event (April). This includes 13 monitoring wells at Brymaroo. **Targeted:** 50 monitoring wells and residential bores have been selected for the targeted sampling event (October).

4.4.2 Surface Water Sampling

The surface water sampling methodology and schedule is presented in **Table 9**.

Table 9 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 should be lowered into the water with the cap immediately applied once the container is full.
QA/QC Samples to be Collected	Field QA/QC samples are to include intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits) and equipment rinsate blank (rinsate) samples. Duplicate samples are to be collected at a minimum frequency of 1 in 10 primary samples. Rinsate samples are to be collected at a rate of one sample per fieldwork day by pouring laboratory supplied PFAS-free deionised water over the decontaminated sampling equipment.
Field Parameters	Temperature, EC, DO, ORP, pH and observations of water quality will be recorded for all samples.
Sample Analysis	All primary samples will be submitted for PFAS extended suite using the standard levels of detection.
Sampling Schedule	The surface water sampling will be conducted annually as part of the annual comprehensive event (April).

4.4.3 Sediment Sampling

The surface water sampling methodology and schedule are outlined in **Table 10**.

Table 10 Sediment Sampling Methodology and Schedule

Item	Details
Sample Collection Methodology	Samples representative of potentially deposited sediments to be collected from within the water body if possible. Sediment samples will be collected using a trenching shovel from the base of the drain (where possible), or using a Dormer Piston Sediment Sampler. At each location, a new laboratory supplied container should be used for each sample.
QA/QC Samples to be Collected	Field QA/QC samples are to include intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits) and equipment rinsate blank (rinsate) samples. Duplicate samples are to be collected at a minimum frequency of 1 in 10 primary samples. Rinsate samples are to be collected at a rate of one sample per fieldwork day by pouring laboratory supplied PFAS free deionised water over the decontaminated sampling equipment.
Sample Analysis	All primary samples will be submitted for PFAS extended suite using the standard levels of detection.
Sampling Schedule	The sediment sampling will be conducted annually as part of the annual comprehensive event (April).

4.4.4 Biota Sampling

Ad hoc biota samples may be collected at the request of Defence in accordance with the sampling methodology and schedule presented in **Table 11**.

Table 11 Biota Sampling Methodology and Schedule

Item	Details
Sample Collection Methodology	Targeting sampling of biota (e.g. aquatic biota such as fish, crayfish) may need to be conducted on an ad hoc basis. Appropriate sampling techniques will be used to collect the samples; for example gill nets or electro fishing will be used to collect fish, sample traps could be used to collect crayfish. Where required, samples will be collected by a qualified contractor holding a general fisheries permit for the collection of tissue samples. Where required to obtain sufficient sample mass for laboratory analysis, multiple specimens of the same species may need to be composited. Sampling of fish for human health assessment will require targeting of fish of consumptive size. Samples will be identified, measured, weighed, photographed and placed in a zip lock bag following euthanasia in ice slurry.
QA/QC Samples to be Collected	No QA/QC samples will be collected.
Sample Analysis	All primary samples will be submitted for PFAS extended suite using the standard levels of detection for biota samples.
Sampling Schedule	Samples will be collected on an ad hoc basis at the request of Defence.

4.4.5 Sample Handling and Transport to Laboratory

AECOM personnel will attempt to reduce potential heterogeneity in the sample media matrix by dividing the sample collected between primary and 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 is minimised.

Samples will be transported to the laboratory for analytical testing under standard CoC documentation. Primary and associated duplicate QA/QC samples will be analysed by ALS Brisbane. The inter-laboratory duplicate samples will be analysed by the National Measurement Institute (NMI).

4.5 Calibration

The water quality meter will be calibrated each day prior to the commencement of field activities with relevant solutions, including pH, 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 Events Factual Reports.

4.6 Logistics

The laboratory sample containers will be collected from the laboratory prior to the commencement of fieldwork. All samples will be transported by an ALS by the field team or a supplied courier at the completion of fieldwork. All inter-laboratory duplicate samples will be couriered from ALS to the secondary laboratory 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 NMI (NATA Accreditation Number 198), respectively.

4.7.2 Analytical Schedule

All media sampled shall be analysed for the extended PFAS suite as outlined in **Table 12** below.

Table 12 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
	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)	2448-09-7
	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 13** below.

Table 13 Laboratory Limits of Reporting

Sample Media	Parameter	Technique/Method Reference	LOR*
Groundwater and Surface Water	Extended PFAS Suite	LC/MS-MS	0.002 – 0.1 µg/L
Sediment	Extended PFAS Suite	LC/MS-MS	0.0002 – 0.001 mg/kg

LC/MS-MS = Liquid chromatography–mass spectrometry, GC = Gas chromatography

*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 Defence Contamination Management Manual (DCCM) naming convention:

PPPP_XX000_ZZZ_YYMMDD

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

e.g. 0902_MW01_191015

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

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

- SD = sediment – top depth required
- MW = monitoring well
- SW = surface water - no depth required

QAQC Samples will be labelled in accordance with the following convention:

- Duplicate: PPPP_QC1XX_YYMMDD
- Triplicate: PPPP_QC2XX_YYMMDD
- Rinsate: PPPP_QC3XX_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 Annex L to the Defence Contamination Management Manual. 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 monitoring 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, 2019. Health Based Guidance Values for PFAS for use in site investigations in Australia. September 2019
- NHMRC, 2019. Guidance on PFAS in Recreational Water. August 2019
- National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013

The adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 14** below.

Table 14 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water - groundwater	PFOS + PFHxS	0.07 µg/L	The values presented in the PFAS NEMP, 2020 are from DoH 2017, which published final health-based guidance values for PFAS for use in site investigations in Australia. DoH utilised the TDI for PFOS and PFOA from FSANZ, 2017 and the methodology described in Chapter 6.3.3 of the National Health and Medical Research Council's (NHMRC) Australian Drinking Water Guidelines (ADWG), 2016 to determine drinking water values. *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	In August 2019, NHMRC released guidance on the assessment of PFAS in surface water. Rather than adopting an ingestion rate of 0.2 L of water per day (as per the ADWG formula), NHMRC adjusted this rate with consideration of an event frequency (150 events / year) to calculate an annual ingestion rate of 30 L per year. *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			

Pathway	Compound	Criteria	Comment / Reference
Freshwater (99% species protection values)	PFOS PFOA	0.00023 µg/L 19 µg/L	The values are from the PFAS NEMP, 2018 which endorsed the Australian and New Zealand Guidelines for Fresh and Marine Water Quality – draft default guideline values. AECOM understands that these guidelines are currently being reviewed and will consider the appropriateness of considering any future revision. The 99% level of protection has been applied for slightly to moderately disturbed ecosystems. This approach is generally adopted for chemicals that bioaccumulate and biomagnify in wildlife. For the purposes of preliminary screening of analytical water results, the laboratory LOR will be adopted rather than sole use of the criteria value. *All surface water and groundwater results will be compared to these criteria.*

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.

Waste water generated will be provided to the on-site groundwater treatment plant for disposal.

All consumables (i.e. HydraSleeves™, filter cartridges, general rubbish) will be bagged and placed in on-site 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) duplicate samples and split (inter-laboratory field duplicates) are to 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 or at least one rinsate sample per ten primary samples (whichever rate is lower) by pouring laboratory supplied deionised water over the decontaminated sampling equipment.

4.13 Fieldwork Documentation

4.13.1 Field Notes

Field notes will be 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 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 at regular intervals;
- Surface water samples – comments on the observed characteristics of the sample (e.g. colour, turbidity, odour, sheen) and field water quality parameters (pH, EC, DO, ORP, temperature) will be recorded; and
- Sediment 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 geo-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 utilized 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

Sample containers will be labelled, as a minimum, with the following information:

- AECOM project number
- Name of sampler
- Sample ID
- Date of sample collection
- Filtered vs non-filtered (for water samples only).

An indelible felt pen will be used for labelling, to ensure that the lettering is not erased during transit to the laboratory.

AECOM will utilize 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.

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 form will include the following information:

- Job number (Note: the name of the site is not identified for confidentiality purposes)
- Date and time of sample collection
- Sample ID
- Type of containers
- Name of sampler
- Laboratory to be used
- Analyses required
- Any comments
- 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
- Calibration records.

Records of all equipment calibration will be included in the Sampling Event Factual Reports.

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. any visual or olfactory observations that may indicate impacts to surface water or groundwater)
- 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
- a presentation of the reduced groundwater levels for the event on a figure with inferred contours and inferred groundwater flow direction
- discussion of the analytical data quality, including review of the quality control sampling results and laboratory quality control data
- inclusion of the following information as attachments:
    - Groundwater sampling forms including field water quality parameter measurements;
        i. Chain of custody forms;
        ii. Laboratory analytical certificates; and
        iii. Equipment calibration certificates.

4.14.2 Annual Interpretive 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 (Defence, 2019)
- relevant figures depicting sampling locations and site-specific hydrogeological features
- laboratory results and analysis including comparison with relevant screening criteria as identified in each OMP (Defence, 2019)
- 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 an OMP (Defence, 2019)
- a statement as to whether the risk profile has changed overall, or for any specific location at the Site, and a recommendation as to whether this should trigger an OMP and/or PMAP review, or other action.

4.15 Deviations from OMP

While the scope of works and methodology described in this SAQP are generally consistent with that presented in the OMP (Defence, 2019), a number of points of deviation are noted (refer to **Table 15** below).

Table 15 Deviations from OMP

No.	Description	Rationale
1	Use of HydraSleeves™ rather than low flow / bladder pumps for the collection of groundwater samples	The AACO OMP specified that groundwater samples were to be collected using low flow sampling equipment (bladder pump) where depth to groundwater is less than 50 metres below ground surface (mbgs). As part of AECOM's tender submission for the Defence OMP Program in March 2019, it was proposed to complete groundwater sampling across all Defence regions utilising no-purge HydraSleeves™. In addition to time and cost saving considerations, the adoption of HydraSleeves™ across the broader program was aimed to improve consistency, quality and comparability of groundwater data across sites and regions.
2	Adoption of Revised Recreational Screening Criteria for PFOS+PFHxS and PFOA	Following the release of the PMAP and OMP in July 2019, the National Health and Medical Research Council (NHMRC), published guidance on PFAS in Recreational Water in August 2019. The adopted screening criteria for PFOS+PFHxS and PFOA in surface water have therefore been revised to 2 µg/L and 10 µg/L, respectively.
3	Monitoring locations removed from the OMP	Defence has instructed the removal of sampling of bores owned by Toowoomba Regional Council and removal of sampling of residential bores where there will be no significant effect on the understanding of the extent of PFAS in groundwater. Where a significant effect is identified, alternative bores have been included. The following bores have been removed from the OMP: Comprehensive (April) event: MW106, MW107, MW108, MW027, MW034, MW037, MW091, MW004, MW006, MW100, MW011, MW023, MW029, MW045, MW063, MW064, MW046, MW084, MW138, MW119, MW142. Targeted (October) event: MW106, MW107, MW108, MW021, MW046, MW084, MW293, MW160. The following bores have been added to the OMP: Comprehensive (April) event: MW022. Targeted (October) event: MW276, MW272, MW269, MW022.
4	Changes to the analytical suite	Analysis for non-PFAS analytes was included during the first three monitoring events (October 2019, April 2020 and October 2020) with 20% of groundwater, surface water and sediment samples analysed for major ions, total suspended solids, electrical conductivity, total organic content or dissolved organic content and cation exchange capacity. Defence has instructed non-PFAS analysis to be discontinued from the April 2021 sampling event.

5.0 References

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Appendix A

Figures

Appendix A Figures

LEGEND

- On-Site Groundwater Monitoring Locations
- Drainage channel
- Watercourse/water body
- Site Boundary

N

0 75 150 300 m

AECOM

SCALE 1:9,100

SIZE A3

SHEET 1 of 1

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure F1: On-Site Groundwater Monitoring Locations

PROJECT

PFAS OMP- AACO SAQP

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MW265
MW118
MW114
MW113
MW151
MW122
MW157
MW160
MW021
MW019
MW272
MW022
MW061
MW273
MW147
MW255
MW296
MW297
MW266
MW276
MW132
MW020
MW274
MW275
MW257
MW032
MW292
MW031
MW003
MW293
MW278
MW280
MW149
MW262
MW279
MW264
MW281
MW282
MW291
MW290
MW283
MW084
MW038
MW288
MW289
MW285
Oakey Creek
Westbrook Creek
Gowrie Creek

LEGEND

- Off-Site Groundwater Monitoring Locations
- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

Note that not all monitoring wells / bores are shown due to privacy reasons.

0 0.25 0.5 1 km

AECOM

SCALE 1:30,000
SIZE A3
SHEET 1 of 1
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 2: Off-Site Groundwater Monitoring Locations

PROJECT
PFAS OMP AACO SAQP

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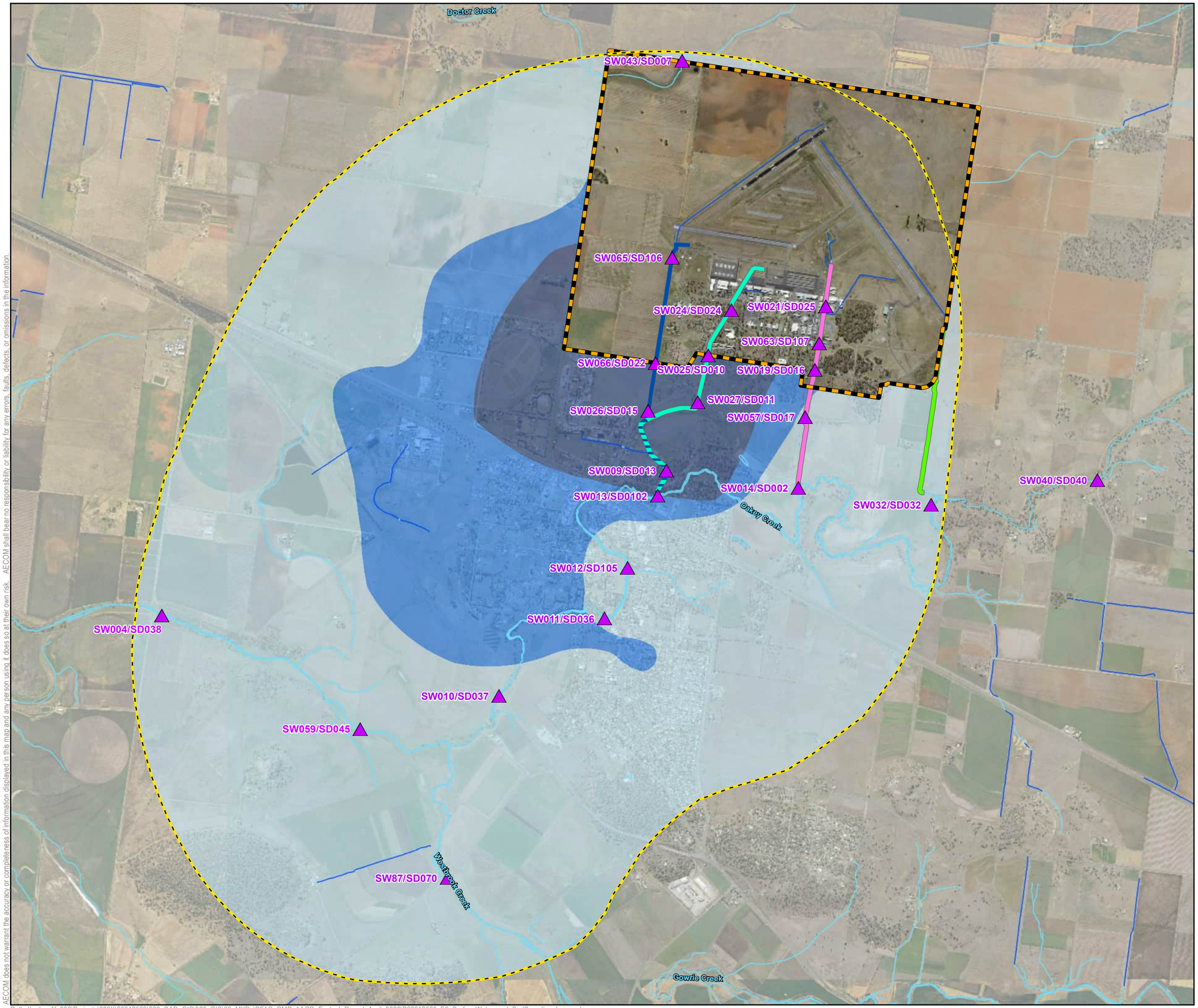

LEGEND

- Offsite Surface Water and Sediment Sampling Locations
- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

N

0 0.25 0.5 1 km

AECOM

SCALE	1:32,000
SIZE	A3
SHEET	1 of 1
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure F3: Surface Water and Sediment Sampling Locations

PROJECT

PFAS OMP- AACO SAQP

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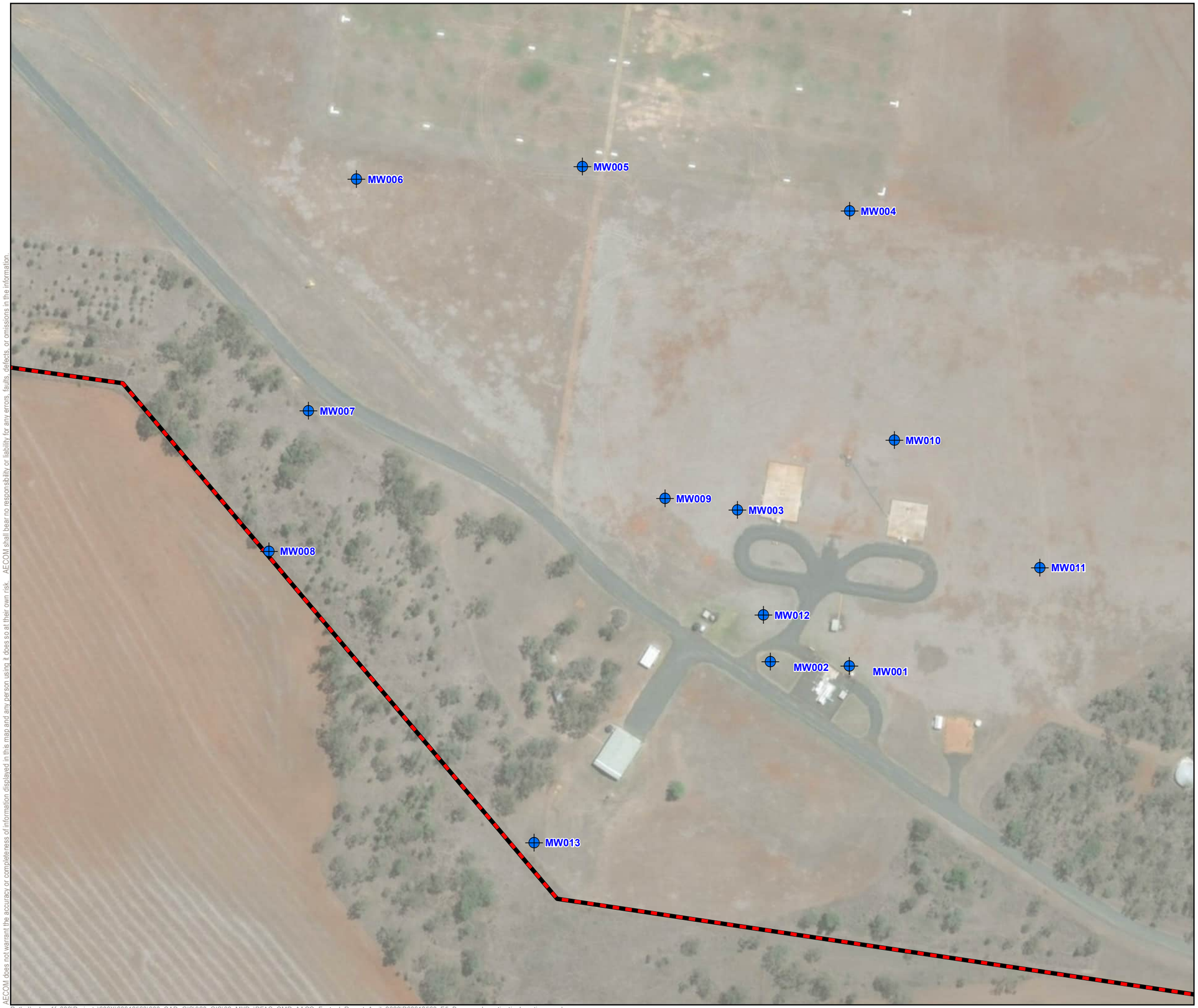

LEGEND

- Groundwater Monitoring Locations
- Brymaroo Satellite Site

0 10 20 40 m

AECOM

SCALE 1:2,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure F4: Brymaroo Groundwater Monitoring Locations

PROJECT

PFAS- OMP AACO SAQP

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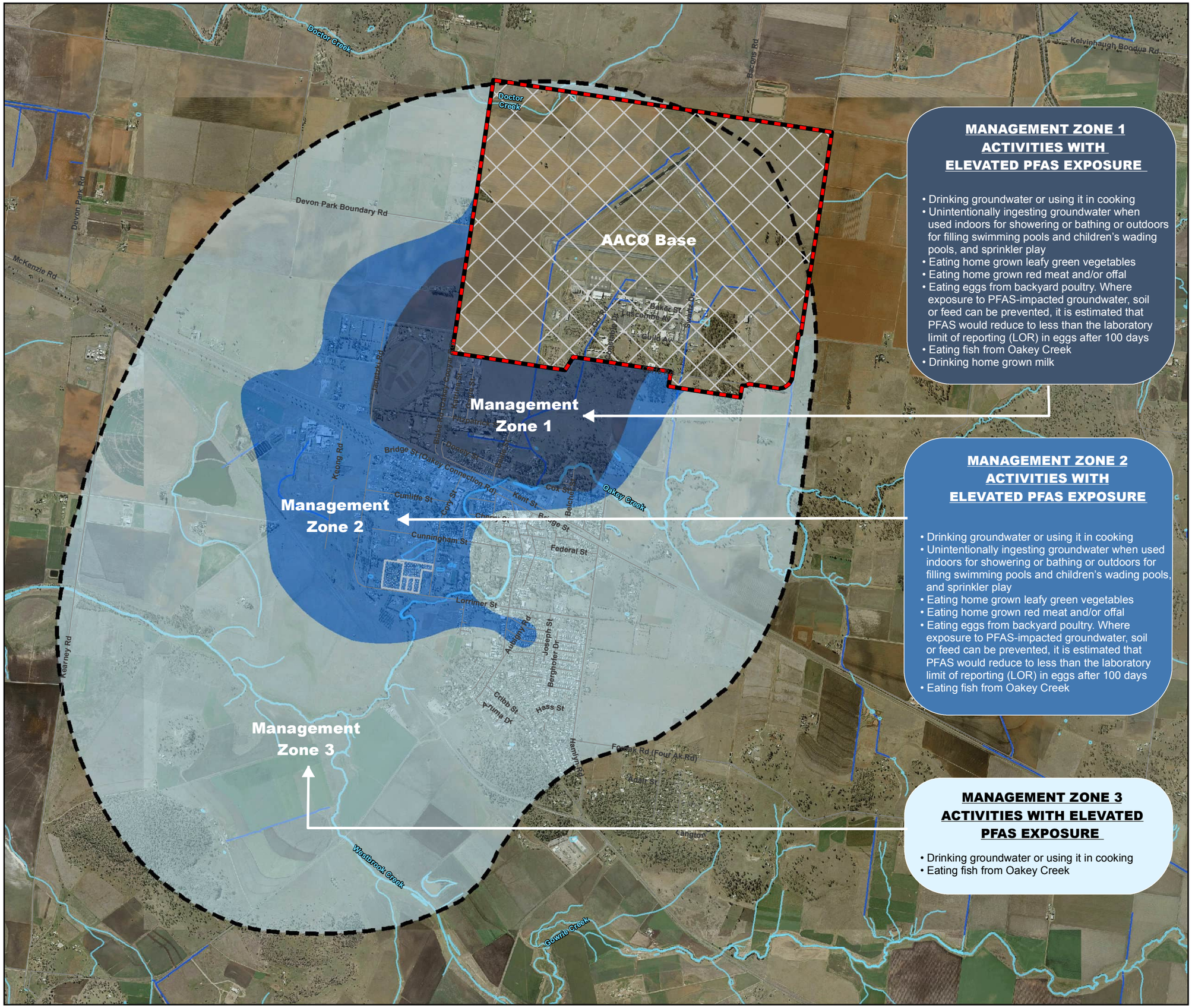
Appendix B

AACO Management Area



LEGEND

- Drainage channel
- Watercourse/water body
- Former Landfill
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Area
- AACO Base

0 0.25 0.5 1 km

SCALE 1:35,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure B 1 : Management Zones - Activities with Elevated PFAS Exposure

PROJECT

PFAS- OMP AACO SAQP

CLIENT

DEPARTMENT OF DEFENCE

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AECOM makes no representations or warranties of any kind, about the accuracy, reliability, completeness, suitability or fitness for purpose in relation to the map content.

Appendix C

Sample IDs

Appendix C Sample IDs

AACO

New Location Code (0207)	Old Location Code
MW001	AACO-GW01
MW002	AACO-GW02
MW003	AACO-GW03
MW004	AACO-GW04
MW005	AACO-GW05
MW006	AACO-GW06
MW007	AACO-GW07
MW008	AACO-GW08
MW009	AACO-GW09
MW010	AACO-GW10
MW011	AACO-GW11
MW012	AACO-GW12
MW013	AACO-GW13
MW014	AACO-GW14
MW015	AACO-GW15
MW016	AACO-GW16
MW017	AACO-GW17
MW018	AACO-GW18
MW019	AACO-GW19
MW020	AACO-GW20
MW021	AACO-GW21
MW022	AACO-GW22
MW023	AACO-GW23
MW024	AACO-GW24
MW025	AACO-GW25
MW026	AACO-GW26
MW027	AACO-GW27
MW028	AACO-GW28
MW029	AACO-GW29
MW030	AACO-GW30
MW031	AACO-GW31
MW032	AACO-GW32
MW033	AACO-GW33
MW034	AACO-GW34
MW035	AACO-GW35
MW036	AACO-GW36
MW037	AACO-GW37
MW038	AACO-GW38
MW039	AACO-GW39
MW040	AACO-GW40
MW041	AACO-GW41
MW042	AACO-GW42
MW043	AACO-GW43
MW044	AACO-GW44

New Location Code (0207)	Old Location Code
MW045	AACO-GW45
MW046	AACO-GW46
MW047	AACO-GW47
MW048	AACO-GW48
MW049	AACO-GW49
MW050	AACO-GW50
MW051	AACO-GW51
MW052	AACO-GW52
MW053	AACO-GW53
MW054	AACO-GW54
MW055	AACO-GW55
MW056	AACO-GW56
MW057	AACO-GW57
MW058	AACO-GW58
MW059	AACO-GW59
MW060	AACO-GW60
MW061	AACO-GW61
MW062	AACO-GW62
MW063	AACO-GW63
MW064	AACO-GW64
MW065	AACO-GW65
MW066	AACO-GW66
MW067	AACO-GW67
MW068	AACO-GW68
MW069	AACO-GW69
MW070	AACO-GW70
MW071	AACO-GW71
MW072	AACO-GW72
MW073	AACO-GW73
MW074	AACO-GW74
MW075	AACO-GW75
MW076	AACO-GW76
MW077	AACO-GW77
MW078	AACO-GW78
MW079	AACO-GW79
MW080	AACO-GW80
MW081	AACO-GW81
MW082	AACO-GW82
MW083	AACO-GW83
MW084	AACO-GW84
MW085	AACO-GW85
MW086	AACO-GW86
MW087	AACO-GW87
MW088	AACO-GW88
MW089	AACO-GW89
MW090	AACO-GW90
MW091	AACO-GW91
MW092	AACO-GW92

New Location Code (0207)	Old Location Code
MW093	AACO-GW93
MW094	AACO-GW94
MW095	AACO-GW95
MW096	AACO-GW96
MW097	AACO-GW97
MW098	AACO-GW98
MW099	AACO-GW99
MW100	AACO-GW100
MW106	AACO-BORE5
MW107	AACO-BORE6
MW108	AACO-BORE7
MW109	AACO-BORE8
MW110	AACO-RN87015
MW112	AACO-RN137030
MW113	AACO-RN48068
MW114	AACO-RN44070
MW115	AACO-RN26097
MW116	AACO-RN64115
MW117	AACO-RN55116
MW118	AACO-RN107119
MW119	AACO-RN35185
MW120	AACO-RN83204
MW121	AACO-RN147211
MW122	AACO-RN83214
MW123	AACO-RN36256
MW124	AACO-RN66256
MW125	AACO-RN119261
MW126	AACO-RN83264
MW127	AACO-RN66274
MW128	AACO-RN137284
MW129	AACO-RN61286
MW130	AACO-RN119324
MW132	AACO-RN147352
MW133	AACO-RN43357
MW134	AACO-RN83362
MW135	AACO-RN87369
MW138	AACO-RN36426
MW139	AACO-RN137433
MW140	AACO-RN87439
MW141	AACO-RN35453
MW142	AACO-RN64455
MW143	AACO-RN147464
MW144	AACO-RN147480
MW145	AACO-RN61496
MW146	AACO-RN66503
MW147	AACO-RN107547
MW148	AACO-RN16592
MW149	AACO-RN43659

New Location Code (0207)	Old Location Code
MW150	AACO-RN87659
MW151	AACO-RN86696
MW152	AACO-RN147699
MW153	AACO-RN137706
MW154	AACO-RN86733
MW155	AACO-RN107812
MW156	AACO-RN87870
MW157	AACO-RN21897
MW158	AACO-RN21974
MW159	AACO-RN35983
MW160	AACO-RN21997
MW161	AACO-RN52999
MW167	AACO-MWA1-B
MW168	AACO-MWA1-D
MW169	AACO-MWA2-A
MW170	AACO-MWA2-B
MW171	AACO-MWA2-C
MW172	AACO-MWA2-D
MW173	AACO-MWA2-E
MW174	AACO-MWA4-A
MW176	AACO-MWA4-B-BB
MW177	AACO-MWA4-B-LA
MW178	AACO-MWA4-B-UA
MW179	AACO-MWA5-A-LA
MW180	AACO-MWA5-A-UA
MW185	AACO-MWB3-A
MW186	AACO-MWB3-B
MW187	AACO-MWB5-A
MW188	AACO-MWB5-A-WCM
MW189	AACO-MWB5-B
MW190	AACO-MWB5-C
MW191	AACO-MWB5-D
MW193	AACO-MWC1-C
MW198	AACO-MWC1-H
MW199	AACO-MWC1-I
MW201	AACO-MW201
MW202	AACO-MW202
MW203	AACO-MW203
MW204	AACO-MW204
MW205	AACO-MW205
MW206	AACO-MWC2-A
MW207	AACO-MWC2-B
MW208	AACO-MWC2-C
MW217	AACO-MWC2-D
MW218	AACO-MWC2-E
MW221	AACO-MWC2-I
MW222	AACO-MWC2-K
MW223	AACO-MWC2-L

New Location Code (0207)	Old Location Code
MW224	AACO-MWC2-M
MW225	AACO-MWC2-N
MW226	AACO-MWC2-O
MW227	AACO-MWC2-Q
MW228	AACO-MWC3-A
MW229	AACO-MWC3-I
MW230	AACO-MWD2-A
MW231	AACO-RN87231
MW232	AACO-MWD2-E
MW233	AACO-MWE-J
MW235	AACO-MWF1-B
MW236	AACO-MWF1-C
MW240	AACO-MWF1-G
MW241	AACO-MWF1-H
MW242	AACO-MWG1-A-LA
MW245	AACO-MWG1-C-LA
MW247	AACO-MWN-B
MW249	AACO-MWN-D
MW250	AACO-MWN-H-LA
MW252	AACO-MWN-I
MW253	AACO-MWN-J
MW254	AACO-MWN-K
MW255	AACO-MWO-A-LA
MW256	AACO-MWO-A-UA
MW257	AACO-MWO-B-LA
MW258	AACO-MWO-B-UA
MW261	AACO-MWO-D-LA
MW262	AACO-MWO-D-UA
MW263	AACO-MWO-E-LA
MW264	AACO-MWO-E-UA
MW265	AACO-MWO-F-AL
MW266	AACO-MWO-G-AL
MW267	AACO-MWO-H-AL
MW268	AACO-MWO-H-UA
MW269	AACO-MWO-H-WCM
MW270	AACO-MWO-I-AL
MW271	AACO-MWO-I-MRV
MW272	AACO-MWO-J-AL
MW273	AACO-MWO-J-WCM
MW274	AACO-MWO-K-AL
MW275	AACO-MWO-K-MRV
MW276	AACO-MWO-L-AL
MW278	AACO-MWO-M-AL
MW279	AACO-MWO-N-AL
MW280	AACO-MWO-O-AL
MW281	AACO-MWO-P-AL
MW282	AACO-MWO-Q-AL
MW283	AACO-MWO-R-AL

New Location Code (0207)	Old Location Code
MW285	AACO-MWO-T-AL
MW288	AACO-MWO-V-AL
MW289	AACO-MWO-V-WCM
MW290	AACO-MWO-W-AL
MW291	AACO-MWO-W-WCM
MW292	AACO-MWO-X-AL
MW293	AACO-MWO-X-WCM
MW294	AACO-MWO-Y-AL
MW295	AACO-MWO-Y-WCM
MW296	AACO-MWO-Z-AL
MW297	AACO-MWO-Z-WCM
MW298	AACO-MWS1-A
MW299	AACO-MWS1-B
MW300	AACO-MWS1-D
SD001	AACO-SED001
SD002	AACO-SED002
SD004	AACO-SED004
SD005	AACO-SED005
SD006	AACO-SED006
SD007	AACO-SED007
SD008	AACO-SED08
SD009	AACO-SED09
SD010	AACO-SED010
SD011	AACO-SED011
SD012	AACO-SED012
SD013	AACO-SED013
SD014	AACO-SED014
SD015	AACO-SED015
SD016	AACO-SED016
SD017	AACO-SED017
SD019	AACO-SED019
SD020	AACO-SED020
SD021	AACO-SED021
SD022	AACO-SED22
SD023	AACO-SED23
SD024	AACO-SED24
SD025	AACO-SED25
SD030	AACO-SED030
SD031	AACO-SED031
SD032	AACO-SED032
SD035	AACO-SED035
SD036	AACO-SED036
SD037	AACO-SED037
SD040	AACO-SED040
SD041	AACO-SED041
SD042	AACO-SED042
SD044	AACO-SED044
SD045	AACO-SED045

New Location Code (0207)	Old Location Code
SD046	AACO-SED046
SD047	AACO-SED047
SD048	AACO-SED048
SD049	AACO-SED049
SD050	AACO-SED050
SD051	AACO-SED051
SD052	AACO-SED052
SD053	AACO-SED053
SD054	AACO-SED054
SD055	AACO-SED055
SD056	AACO-SED056
SD057	AACO-SED057
SD058	AACO-SED058
SD059	AACO-SED059
SD060	AACO-SED060
SD061	AACO-SED061
SD062	AACO-SED062
SD063	AACO-SED063
SD064	AACO-SED064
SD065	AACO-SED065
SD066	AACO-SED66
SD067	AACO-SED67
SD068	AACO-SED68
SD070	AACO-SED070
SD074	AACO-SED018A
SD075	AACO-SED018B
SD076	AACO-SED033A
SD077	AACO-SED033B
SD078	AACO-SED034A
SD079	AACO-SED034B
SD100	AACO-SED100
SD102	AACO-SED102
SD103	AACO-SED103
SD104	AACO-SED104
SD105	AACO-SED105
SD106	AACO-SED106
SD107	AACO-SED107
SW001	AACO-SW01
SW002	AACO-SW02
SW003	AACO-SW03
SW004	AACO-SW04
SW005	AACO-SW05
SW006	AACO-SW06
SW007	AACO-SW07
SW008	AACO-SW08
SW009	AACO-SW09
SW010	AACO-SW10
SW011	AACO-SW11

New Location Code (0207)	Old Location Code
SW012	AACO-SW12
SW013	AACO-SW13
SW014	AACO-SW14
SW015	AACO-SW15
SW016	AACO-SW16
SW017	AACO-SW17
SW018	AACO-SW18
SW019	AACO-SW19
SW020	AACO-SW20
SW021	AACO-SW21
SW022	AACO-SW22
SW023	AACO-SW23
SW024	AACO-SW24
SW025	AACO-SW25
SW026	AACO-SW26
SW027	AACO-SW27
SW028	AACO-SW87
SW029	AACO-SW88
SW030	AACO-SW30
SW031	AACO-SW31
SW032	AACO-SW32
SW033	AACO-SW89
SW034	AACO-SW90
SW035	AACO-SW35
SW036	AACO-SW36
SW037	AACO-SW37
SW038	AACO-SW33A
SW039	AACO-SW33B
SW040	AACO-SW40
SW041	AACO-SW41
SW042	AACO-SW42
SW043	AACO-SW43
SW044	AACO-SW34A
SW045	AACO-SW34B
SW050	AACO-SW50
SW051	AACO-SW51
SW053	AACO-SW53
SW054	AACO-SW54
SW055	AACO-SW55
SW056	AACO-SW56
SW057	AACO-SW57
SW058	AACO-SW58
SW059	AACO-SW59
SW060	AACO-SW60
SW061	AACO-SW61
SW062	AACO-SW62
SW063	AACO-SW63
SW064	AACO-SW64

New Location Code (0207)	Old Location Code
SW065	AACO-SW65
SW066	AACO-SW66
SW067	AACO-SW67
SW068	AACO-SW68
SW069	AACO-SW69
SW070	AACO-SW70
SW071	AACO-SW71
SW072	AACO-SW72
SW073	AACO-SW73
SW074	AACO-SW74
SW075	AACO-SW75
SW076	AACO-SW76
SW077	AACO-SW77
SW078	AACO-SW78
SW079	AACO-SW79
SW080	AACO-SW80
SW081	AACO-SW81
SW082	AACO-SW82
SW083	AACO-SW83
SW084	AACO-SW84
SW085	AACO-SW85
SW086	AACO-SW86

Brymaroo

New Location Code (1435)	Old Location Code
MW001	BRY-MW-E
MW002	BRY-MW-F
MW003	BRY-MW-G
MW004	BRY-MW-H
MW005	BRY-MW-I
MW006	BRY-MW-J
MW007	BRY-MW-K
MW008	BRY-MW-L
MW009	BRY-MW-R
MW010	BRY-MW-S
MW011	BRY-MW-T
MW012	BRY-MW-U
MW013	BRY-MW-V
OTH004	WD-18-28
OTH005	WD-7-17
POT001	BRY_TW02
POT002	BRY-A17
POT003	BRY-BH-L
POT004	BRY-TAP01
POT005	BRY-TW01
SED001	BRY-SED-HP

Appendix D

Monitoring Well Construction Details

Appendix D Monitoring Well Construction Details

AACO Monitoring Wells

Location ID	Date of Installation	Easting	Northing	TOC Elevation (m AHD)	Final Depth (m)	Top of screen (mbgs)	Top of screen (mAHD)	Bottom of screen (mbgs)	Bottom of screen (mAHD)	Length of screen (m)	Midpoint of screen (mbgs)	Midpoint of screen (mAHD)	Targeted Depth for sampling (mbgs)
MW167	25/01/2011	373988.700	6967037.700	402.428	16.00	11.5	390.928	16.0	386.428	4.5	13.8	388.678	15.0
MW172	21/02/2017	373952.946	6967329.488	402.818	18.00	12.0	390.818	18.0	384.818	6.0	15.0	387.818	17.0
MW173	23/02/2017	373997.781	6967324.987	403.262	18.00	12.0	391.262	18.0	385.262	6.0	15.0	388.262	17.0
MW174	14/11/2012	374327.000	6966684.000	404.072	29.90	25.0	379.072	29.0	375.072	4.0	27.0	377.072	28.0
MW178	21/11/2015	374420.713	6966460.701	403.513	17.65	14.5	389.013	17.5	386.013	3.0	16.0	387.513	16.5
MW179	19/10/2015	373949.73	6966401.743	403.000	15.01	11.5	391.500	14.4	388.600	2.9	13.0	390.050	13.0
MW201	8/04/2016	374833.900	6966978.300	404.800	20.00	13.0	391.800	20.0	384.800	7.0	16.5	388.300	19.0
MW202	8/04/2016	374867.400	6966984.900	405.000	20.00	12.6	392.400	19.6	385.400	7.0	16.1	388.900	18.5
MW203	01/04/2016	374782.800	6966991.000	405.200	20.02	13.0	392.200	20.0	385.200	7.0	16.5	388.700	19.0
MW204	01/04/2016	374797.30	6967032.300	405.200	20.00	13.0	392.200	20.0	385.200	7.0	16.5	388.700	19.0
MW205	01/04/2016	374801.100	6967057.300	405.700	20.10	13.0	392.200	20.0	385.200	7.0	16.5	388.700	19.0
MW187	3/11/2010	374371.535	6966553.501	404.576	20.00	13.0	391.576	19.0	385.576	6.0	16.0	388.576	18.0
MW189	1/11/2010	374933.124	6966396.323	404.652	21.80	13.8	390.852	21.8	382.852	8.0	17.8	386.852	21.0
MW193	3/12/2010	375179.990	6966963.000	405.630	20.24	14.5	391.130	20.5	385.130	6.0	17.5	388.130	19.5
MW198	28/11/2010	375096.080	6966968.114	405.505	13.54	10.5	395.005	14.0	391.505	3.5	12.3	393.255	13.0
MW206	21/04/2010	375112.346	6966930.445	405.720	20.00	11.0	394.720	20.0	385.720	9.0	15.5	390.220	19.0
MW221	23/11/2010	375177.000	6966868.000	405.496	20.00	14.0	391.496	20.0	385.496	6.0	17.0	388.496	19.0
MW222	29/04/2010	375236.886	6966895.475	405.716	20.00	10.5	395.216	20.0	385.716	9.5	15.3	390.466	19.0
MW223	30/04/2010	375233.446	6966873.127	405.845	20.50	11.5	394.345	20.5	385.345	9.0	16.0	389.845	19.5
MW229	5/05/2010	375035.000	6966784.000	405.533	15.63	6.5	399.033	15.5	390.033	9.0	11.0	394.533	14.5
MW230	8/02/2017	375257.278	6966864.228	405.416	20.00	12.0	393.416	20.0	385.416	8.0	16.0	389.416	19.0
MW232	21/02/2017	375278.884	6967034.038	405.898	12.00	6.0	399.898	12.0	393.898	6.0	9.0	396.898	11.0
MW233	10/02/2017	375852.783	6966869.508	406.47	18.50	9.5	396.970	18.5	387.970	9.0	14.0	392.470	17.5
MW235	4/05/2010	375195.913	6967387.707	406.308	22.50	10.5	395.808	22.5	383.808	12.0	16.5	389.808	21.5
MW236	1/03/2011	375223.000	6967391.000	405.653	18.00	15.0	390.653	18.0	387.653	3.0	16.5	389.153	17.0
MW241	24/02/2017	375132.957	6967284.431	405.883	18.00	9.0	396.883	18.0	387.883	9.0	13.5	392.383	17.0
MW242	19/10/2015	372979.530	6966547.027	402.030	21.14	17.0	385.030	20.0	382.030	3.0	18.5	383.530	19.0
MW245	18/10/2015	373204.825	6968019.455	402.981	21.88	18.0	384.981	21.0	381.981	3.0	19.5	383.481	20.0
MW249	3/05/2010	374753.317	6967348.513	404.769	19.50	10.5	394.269	19.5	385.269	9.0	15.0	389.769	18.5
MW252	24/02/2017	375503.233	6967781.435	406.162	16.50	10.5	395.662	16.5	389.662	6.0	13.5	392.662	15.5
MW253	23/02/2017	374148.760	6967450.300	403.079	19.50	10.5	392.579	19.5	383.579	9.0	15.0	388.079	18.5
MW254	23/02/2017	374105.104	6967454.100	403.05	16.60	10.5	392.550	16.5	386.550	6.0	13.5	389.550	15.5
MW265	23/02/2017	374105.104	6967454.100	403.05	16.60	10.5	392.550	16.5	386.550	6.0	13.5	389.550	15.5
MW299	12/11/2010	374304.020	6967100.140	403.970	15.50	11.00	392.970	15.5	388.470	4.5	13.3	390.720	14.5
MW300	9/02/2017	374284.45	6967091.281	403.715	20.00	11.0	392.715	20.0	383.715	9.0	15.5	388.215	19.0
MW255	14/10/2015	371269.338	6966290.787	397.784	24.09	21.0	376.784	24.0	373.784	3.0	22.5	375.284	23.0
MW257	15/10/2015	372725.267	6965608.026	400.833	23.90	21.0	379.833	24.0	376.833	3.0	22.5	378.333	23.0
MW262	13/10/2015	371282.068	6964911.981	398.329	18.05	14.7	383.629	17.7	380.629	3.0	16.2	382.129	16.7
MW264	12/10/2015	369386.635	6964300.399	392.755	11.03	8.0	384.755	11.0	381.755	3.0	9.5	383.255	10.0
MW265	27/02/2017	376659.704	6968676.499	408.398	19.00	13.0	395.398	19.0	389.398	6.0	16.0	392.398	18.0
MW266	8/03/2017	373179.025	6966397.463	401.316	21.50	15.5	385.816	21.5	379.816	6.0	18.5	382.816	20.5
MW267	29/03/2017	373662.068	6965912.288	401.392	86.00	44.0	357.392	50.0	351.392	6.0	47.0	354.392	49.0
MW268	25/05/2017	373675.071	6965916.434	401.323	20.00	11.0	390.323	20.0	381.323	9.0	15.5	385.823	19.0

Location ID	Date of Installation	Easting	Northing	TOC Elevation (m AHD)	Final Depth (m)	Top of screen (mbgs)	Top of screen (mAHD)	Bottom of screen (mbgs)	Bottom of screen (mAHD)	Length of screen (m)	Midpoint of screen (mbgs)	Midpoint of screen (mAHD)	Targeted Depth for sampling (mbgs)
MW269	25/05/2017	373666.944	6965913.769	401.958	87.00	84.0	317.958	87.0	314.958	3.0	85.5	316.458	86.0
MW270	21/03/2017	375064.649	6965907.642	404.078	20.00	8.0	396.078	20.0	384.078	12.0	14.0	390.078	19.0
MW271	19/03/2017	375037.598	6965908.795	403.855	63.00	58.0	345.855	63.0	340.855	5.0	60.5	343.355	62.0
MW272	9/03/2017	371625.718	6966537.079	397.972	20.00	14.0	383.972	20.0	377.972	6.0	17.0	380.972	19.0
MW273	17/02/2017	371624.525	6966535.793	398.044	66.00	63.0	335.044	66.0	332.044	3.0	64.5	333.544	65.0
MW274	13/03/2017	372134.234	6965727.269	399.947	31.00	25.0	374.947	31.0	368.947	6.0	28.0	371.947	30.0
MW275	28/02/2017	372135.679	6965728.774	399.911	55.00	49.0	350.911	55.0	344.911	6.0	52.0	347.911	54.0
MW276	28/02/2017	372636.624	6965956.831	400.474	20.00	14.0	386.474	20.0	380.474	6.0	17.0	383.474	19.0
MW278	28/02/2017	374408.336	6965071.276	404.155	22.00	16.0	388.155	22.0	382.155	6.0	19.0	385.155	21.0
MW279	28/02/2017	374930.620	6964394.070	406.341	20.00	12.3	394.041	18.3	388.041	6.0	15.3	391.041	17.0
MW280	27/02/2017	372195.219	6965061.244	398.486	30.00	24.0	374.486	30.0	368.486	6.0	27.0	371.486	29.0
MW281	27/02/2017	372053.568	6964321.963	396.856	20.00	14.0	382.856	18.8	378.056	4.8	16.4	380.456	18.0
MW282	27/02/2017	372687.834	6964215.533	397.327	17.00	10.0	387.327	16.0	381.327	6.0	13.0	384.327	15.0
MW283	19/04/2017	370134.309	6964100.382	395.371	15.00	12.0	383.371	15.0	380.371	3.0	13.5	381.871	14.0
MW285	6/04/2017	372119.867	6962108.831	398.331	10.50	7.5	390.831	10.5	387.831	3.0	9.0	389.331	9.5
MW288	25/05/2017	372916.724	6963661.002	402.161	22.50	18.0	384.161	21.0	381.161	3.0	19.5	382.661	20.0
MW289	25/05/2017	372912.799	6963651.994	402.072	65.00	61.0	341.072	64.0	338.072	3.0	62.5	339.572	63.0
MW290	7/04/2017	373624.533	6964182.101	403.688	21.00	14.0	389.688	21.0	382.688	7.0	17.5	386.188	20.0
MW291	25/03/2017	373619.513	6964183.05	403.709	56.00	53.0	350.709	56.0	347.709	3.0	54.5	349.209	55.0
MW292	29/03/2017	373842.166	6965189.151	401.818	20.00	13.0	388.818	19.0	382.818	6.0	16.0	385.818	18.0
MW293	27/03/2017	373829.134	6965184.296	402.021	68.00	59.0	343.021	68.0	334.021	9.0	63.5	338.521	67.0
MW294	18/04/2017	374648.616	6965454.601	403.780	20.00	14.0	389.780	20.0	383.780	6.0	17.0	386.780	19.0
MW295	22/03/2017	374589.848	6965368.689	402.837	70.00	61.0	341.837	67.0	335.837	6.0	64.0	338.837	66.0
MW296	25/05/2017	371860.259	6966295.711	399.155	20.00	11.0	388.155	20.0	379.155	9.0	15.5	383.655	19.0
MW297	25/05/2017	371864.545	6966295.160	399.230	80.00	74.0	325.230	80.0	319.230	6.0	77.0	322.230	79.0

Brymaroo Monitoring Wells

MW ID	MW ID	EASTING	NORTHING	Relative Elevation (m AHD)	Screen to - from (mbgs)	Date of Installation	Total Depth (m btoc)	Targeted depth for Hydrasleeve (mbtoc)
MW001	MW-E	363293.51	6986842.67	418.53	18 - 21	08/02/2011	21.00	20.0
MW002	MW-F	363249.61	6986844.27	418.22	17.5 - 20.5	26/08/2015	20.50	19.5
MW003	MW-G	363224.76	6986930.66	418.05	17.4 - 20.4	26/08/2015	20.40	19.5
MW004	MW-H	363286.39	6987094.84	417.38	18.5 - 25.0	1/02/2018	25.00	24.0
MW005	MW-I	363139.64	6987119.10	417.85	20.5 - 27.0	1/02/2018	27.00	26.0
MW006	MW-J	363015.56	6987112.34	416.46	20.5 - 27.0	1/02/2018	27.00	26.0
MW007	MW-K	362989.17	6986984.98	416.41	18.5 - 25.0	1/02/2018	25.00	24.0
MW008	MW-L	362967.45	6986907.97	415.19	14.5 - 21.0	1/02/2018	21.00	20.0
MW009	MW-R	363185.37	6986937.35	417.99	20.0 - 26.0	28/02/2017	26.00	25.0
MW010	MW-S	363311.34	6986969.52	418.02	21.0 - 27.1	23/02/2017	27.1	26.0
MW011	MW-T	363391.01	6986899.30	418.29	21.5 - 27.5	1/03/2017	27.5	26.5
MW012	MW-U	363239.11	6986873.82	418.34	21.5 - 27.5	28/02/2017	27.5	26.5
MW013	MW-V	363113.95	6986748.15	415.93	18.5 - 24.0	27/02/2017	24.0	23.0