



Member of the Surbana Jurong Group



SMEC INTERNAL REF. 30018048

PFAS Investigation Report

Patyegarang Project - PFAS Investigation

Client Reference No. 30018048
Prepared for: Metropolitan Local Aboriginal Land Council
14 July 2023

Through our specialist expertise, we deliver advanced infrastructure solutions for our clients and partners.

Leveraging our 70-year history of delivering nation-building infrastructure, we provide technical expertise and advanced engineering services to resolve complex challenges.

Through our network of global specialists collaborating with local partners, we connect you with the best teams and capabilities to deliver innovative and sustainable solutions.

We're redefining exceptional

Document Control

Document Type	PFAS Investigation Report
Project Title	Patyegarang Project - PFAS Investigation
Project Number	30018048
File Location	\\filer.nasuni.local\SMEECANZ\Projects\300180\30018048\600 Deliverables\1. PFAS Investigation\Rev2
Revision Number	2

Revision History

Revision No.	Date	Reason for revision	Prepared By	Reviewed By	Approved for Issue By
0	30/06/2022	Issue to Client	Pauline Voukidis	Steven Drysdale	Steven Drysdale
1	28/09/2022	Update Client reference	Pauline Voukidis	Steven Drysdale	Steven Drysdale
2	14/07/2023	Update project details	Pauline Voukidis	Steven Drysdale	Steven Drysdale

Issue Register

Distribution List	Date Issued	Number of Copies
Metropolitan Local Aboriginal Land Council	14/07/2023	1

SMEC Company Details

Approved by	Steven Drysdale
Address	Level 5, 20 Berry Street, North Sydney NSW 2060 Australia
Phone	+61 (02) 9925 5555
Email	steven.drysdale@smec.com
Website	www.smec.com
Signature	

The information within this document is and shall remain the property of:
SMEC Australia Pty Limited

Important Notice

This report is confidential and is provided solely for the purposes of closing out data gaps identified in the Preliminary Site Investigation (SMEC 2022), regarding potential PFAS use impacting the Site from nearby Belrose Rural Fire Service depot. This report is provided pursuant to a Consultancy Agreement between SMEC Australia Pty Limited (“SMEC”) and Metropolitan Local Aboriginal Land Council, under which SMEC undertook to perform a specific and limited task for [Client Name]. This report is strictly limited to the matters stated in it and subject to the various assumptions, qualifications and limitations in it and does not apply by implication to other matters. SMEC makes no representation that the scope, assumptions, qualifications and exclusions set out in this report will be suitable or sufficient for other purposes nor that the content of the report covers all matters which you may regard as material for your purposes.

This report must be read as a whole. The executive summary is not a substitute for this. Any subsequent report must be read in conjunction with this report.

The report supersedes all previous draft or interim reports, whether written or presented orally, before the date of this report. This report has not and will not be updated for events or transactions occurring after the date of the report or any other matters which might have a material effect on its contents, or which come to light after the date of the report. SMEC is not obliged to inform you of any such event, transaction or matter nor to update the report for anything that occurs, or of which SMEC becomes aware, after the date of this report.

Unless expressly agreed otherwise in writing, SMEC does not accept a duty of care or any other legal responsibility whatsoever in relation to this report, or any related enquiries, advice or other work, nor does SMEC make any representation in connection with this report, to any person other than [Client Name]. Any other person who receives a draft or a copy of this report (or any part of it) or discusses it (or any part of it) or any related matter with SMEC, does so on the basis that he or she acknowledges and accepts that he or she may not rely on this report nor on any related information or advice given by SMEC for any purpose whatsoever.

Contents

Abbreviations and Acronyms	1
1. Introduction	1
1.1 General.....	1
1.2 Background	1
1.3 Objectives.....	1
1.4 Scope of Work.....	1
2. Site Description	3
2.1 Site Location	3
2.2 PSI Summary (SMEC 2022)	3
2.2.1 Site History Summary	4
2.2.2 PSI Conclusions and Recommendations.....	4
2.3 Belrose Rural Fire Service.....	4
3. Assessment Criteria	5
3.1 Soil.....	5
3.1.1 Human Health Criteria.....	5
3.1.2 Ecological Criteria	5
3.2 Water	5
4. Field and Laboratory Investigation	6
4.1 Test Pits	6
4.2 Soil Sampling	6
4.3 Surface Water	7
4.4 Groundwater Seepage	7
4.5 Field and Laboratory Testing Schedule	7
5. Quality Assurance and Quality Control	8
5.1 Sample Handling, Storage and Transportation	8
5.2 Equipment Decontamination	8
5.3 Methods	8
5.4 Trip Blank and Trip Spike Samples.....	8
5.5 Field Duplicate Samples	8
5.6 PFAS Protocols	9
5.7 Field and Laboratory QAQC.....	9
5.7.1 QAQC Summary.....	9
6. Field and Laboratory Results	10
6.1 Subsurface Conditions.....	10
6.2 Laboratory Results	10
6.2.1 Soil.....	10
6.2.2 Surface Water.....	10
7. Conclusions	11
8. References	12

Appendices

Appendix A.	Figures
Appendix B.	Photographic Log
Appendix C.	Test Pit Logs
Appendix D.	DQIs
Appendix E.	Analytical Summary Tables
Appendix F.	Laboratory Reports

Tables

Table 2-1: Summary of site information	3
Table 4-1 Summary of testing quantities.....	7
Table 5-1 Field Duplicate Samples.....	8
Table 6-1 General Summary of Subsurface Conditions.....	10

Abbreviations and Acronyms

Abbreviation/Acronym	Meaning
ACM	Asbestos Containing Materials
AEC	Areas of Environmental Concern
BYD	Before You Dig
CoC	Chain of Custody
CoPC	Contaminants of Potential Concern
DQI	Data Quality Indicator
6:2 FTS	6:2 Fluorotelomer Sulfonate
m bgl	Metres Below Ground Level
NATA	National Association of Testing Authorities Australia
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
PFHxA	Perfluorohexanoic acid
PFHxS	Perfluorohexane sulfonic acid
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonic acid
PFPeA	Perfluoropentanoic acid
PID	Photoionisation detector
RFS	Rural Fire Service
RPD	Relative Percent Differences
S-P-R	Source-Pathway-Receptor
SWMS	Safe Work Method Statements
USCS	Unified Soil Classification Systems

1. Introduction

1.1 General

SMEC Australia Pty Ltd (SMEC) was engaged by Metropolitan Local Aboriginal Land Council (MLALC) to carry out Additional Investigation works for the Patyegarang Project, a proposed residential development located off Morgan Road, Belrose 2085 NSW (the Site), to address data gaps present within the Preliminary Site Investigation (PSI) undertaken by SMEC (2020) regarding the potential for PFAS. The Site is located within the North-East subregion of the Sydney Metropolitan Region and the Northern Beaches Local Government Area.

This report provides an Additional Investigation Report for field works undertaken at the Site to address data gaps identified during the PSI (SMEC 2020).

1.2 Background

SMEC understands the Site is proposed to be subdivided into 450 dwelling caps developed for residential purposes, with the proposed design including the following:

- New road networks
- Neighbourhood services/amenities area
- Development of areas of 'larger lot' and 'typical lot' living areas
- Aboriginal cultural centre/ open space
- Green corridor/green buffer
- Environmental conservation area
- Riparian corridor
- Pedestrian bridge

SMEC previously prepared a PSI (SMEC 2020) for the site which identified three areas of environmental concern. These included areas of fly tipped waste (AEC1), areas of bare earth which may be areas of filling (AEC2) and the offsite rural fire station which may have potentially used per- & polyfluoroalkyl substances (PFAS) for fire-fighting activities (AEC3).

The PSI considered the site to be suitable for the proposed residential development subject to addressing the three areas of environmental concern.

Due to the slope and heavy vegetation at the Site, access to AEC2 is not available at this stage, with AEC1 to be addressed during the construction stage. As such, this report aims to address the data gaps associated with PFAS (AEC3).

A Site figure is presented in **Figure 1, Appendix A**. AEC3 is presented in **Figure 2, Appendix A**.

1.3 Objectives

The objective of the investigation is to address data gaps regarding potential PFAS impact at the Site.

1.4 Scope of Work

To fulfil the above objective, the following scope of work was undertaken:

- Contact the Rural Fire Service (RFS) regarding potential use of PFAS substances at the Site or RFS depot (Belrose RFS).
- Preparation of health, safety and environmental documentation for the works.
- Undertake a before you dig search and service location.

- Field investigation comprising excavation of five test pits, soil sampling, groundwater seepage sampling (if present), and surface water sampling.
- Laboratory testing of soil and water samples at a NATA accredited laboratory for PFAS (identified as a contaminant of potential concern in the Site PSI (SMEC 2022)).
- Comparison of soil and water data against relevant assessment criteria as part of data interpretation.
- Preparing this report presenting the findings of the assessment and making conclusions and recommendations as per the objectives identified in **Section 1.3** above.

2. Site Description

2.1 Site Location

A summary of Site information is presented in **Table 2-1**. The Site location and layout are presented in **Figure 1, Appendix A**.

Table 2-1: Summary of site information

Item	Description
Title Identifiers	Lots encompassing the entire proposed development footprint: Lot 89-93 (DP752038), Lot 176-178 (DP752038), Lot 189-191 (DP752038), Lot 196-197 (DP752038), Lot 944-948 (DP752038), Lot 953 (DP752038), Lot 2600 (DP752038), Lot 2630 (DP752038), Lot 2 (DP1242330) Lots relevant to this investigation: Lot 944-947 (DP752038)
Address	Morgan Road, Belrose, 2085, NSW
Area	Approximate area (entire proposed development): 72.021 hectares (ha) Approximate area (this investigation): 380 linear metres
Owner	Metropolitan Local Aboriginal Land Council (MLALC)
Zoning	The Site is located within the Northern Beaches Council Local Government Area (LGA) and was un-zoned and listed as "DM Deferred Matter" under Warringah Local Environmental Plan, 2011 at the time of the investigation. Subsequent zoning maps provided to SMEC have the Site listed as C2, RE2 and R2.
Current Land use	Undeveloped bushland
Proposed land use	Residential development
Surrounding land use	North: Typically, bushland and several estate residential properties. Flewys Tyres 24hr Roadside Service is located approximately 250 metres (m) north east of the Site. Glenaeon Retirement Village is located approximately 250 m north west of the Site. Belrose Rural Fire Service (RFS) is located approximately 500m north east of the Site South: Typically, bushland with residential beyond. Telstra Oxford Falls Cable Landing Station located immediately south of the Site. East: Typically, bushland with estate residential properties. CC Pines Pty Ltd (builder) is located immediately east of the Site. West: Typically, low-density residential properties dominate the Belrose suburban area and along Forest Way. An aged care and community centre is located immediately west of the Site.

The Site is separated into two sections, split by Morgan Road. Morgan Road runs along the northern perimeter and then runs in a south eastern direction. This separates the western portion of the Site from the eastern portion of the Site. The western portion of the site covers approximately 51 ha of land and contains the majority of the proposed subdivision. The eastern portion is approximately 21 ha in size with approximately one third of the land use proposed for the subdivision and the remaining proposed as environmental conservation area. Kelly's Way crosses the boundary of the Site at two points along the eastern perimeter.

2.2 PSI Summary (SMEC 2022)

SMEC carried out a PSI (SMEC 2022), which included a review of Site history, Site walkover, and some targeted sampling. A summary of key elements is provided before.

2.2.1 Site History Summary

The Site history review indicated that the Site appears to have been mainly unused bushland since at least the early 1930s, but some periodic patchy clearing with tracks have been apparent in parts of the Site in the 1950s and 1960s. The reason for the patchy clearing and activities associated with this are not known. Nearby surrounding land use appears to have typically been bushland with some agricultural (possibly orchards) and residential.

Whilst the Site predominantly appears to have been disused bushland, the use of the Site during which bare patches appeared in the 1950s and 1960s is not known and what activities (if any) occurred in these areas. Also, the Site is relatively large and observations were limited to some accessible parts of the Site, not all areas were observed.

2.2.2 PSI Conclusions and Recommendations

Based on the Site history and observations, three potential areas of concern (AEC) and associated potential contamination sources, were identified in the PSI. These are as follows:

- AEC 1 - Areas with fly tipped waste/stockpiles of unknown origin and quality in areas observed during site walkover (but other areas near current/former roads and tracks could also be affected)
- AEC 2 - Patchy bare areas of the site observed in 1950's and 1960s aerial photographs due to unknown activities (north-west and central areas)
- AEC 3- Offsite rural fire station practices (if firefighting aqueous film forming foams were used - with PFAS). PFAS is known to be able to migrate relatively long distances and is persistent in the environment.

Two selected samples of suspected ACM fragments within fly tipped stockpiles in AEC 1 were analysed and confirmed to contain asbestos.

The following conclusions and recommendations were made:

- AEC1 - Areas with fly tipped waste/stockpiles should be clearly identified, assessed and managed as part of future redevelopment work. This is likely to involve classification for offsite disposal. Areas with observed asbestos containing material will need to be managed as asbestos waste in accordance with relevant codes of practice and waste regulations by licenced professionals
- AEC 2 – Further assessment as the likely history of the patchy bare areas. This may include a title search to assess former historical ownership, interviews with residents or a local historical society. Depending on the outcomes, targeted intrusive assessment of these areas is likely warranted to check for evidence of contamination such as filling or subsurface wastes
- AEC 3 – Make contact with the offsite Rural fire station to assess if they have a history of use of PFAS substances and if they have carried out any assessments. We note that this offsite source is a diffuse urban source and if present could affect other areas and properties or could be localised and have no impact to this Site.
- It was generally considered that the Site should be able to be made suitable for the proposed residential development with respect to land contamination, subject to the above recommendations of further assessment and also implementing an unexpected finds procedure during construction (such as within the Construction Environmental Management Plan).
- If any visual or olfactory signs of contamination are identified at the Site, further site investigation and risk assessment may be required.
- The preliminary assessment indicated that the Site is in a soil landscape where salinity is a limitation. Preliminary testing did not suggest saline soils. Salinity was therefore not considered to be a constraint at the Site.

2.3 Belrose Rural Fire Service

SMEC contacted Belrose RFS on 28 July 2022 to gain anecdotal information on the potential use of PFAS-containing substances (i.e. firefighting foam) at the RFS base and surrounds. The Belrose RFS base is located at 207A Forest Way, Belrose NSW 2085, approximately 500m north east of the Site.

In email correspondence dated 29 July 2022, the NSW RFS stated the following: *“We have no record of any PFAS based foams being used on this site. The RFS do not store or use any PFAS based foams”.*

3. Assessment Criteria

The assessment criteria used for this PFAS assessment is summarised below. The criteria used is provided in the relevant summary tables in **Appendix E**.

3.1 Soil

Evaluation against assessment criteria is used to identify levels of contamination that may pose unacceptable risks to potential receptors as identified in the CSM. The following assessment criteria have been sourced from the PFAS National Environment Plan (Version 2.0 – January 2020):

- Table 2 Human health investigation levels (HIL) for soil
- Table 3 Ecological guideline values for soils – Ecological direct exposure and indirect exposure

3.1.1 Human Health Criteria

Health investigation levels (HIL) are scientifically based, generic assessment criteria designed to be used in the first stage (Tier 1 or 'screening') of an assessment of potential risks to human health from chronic exposure to contaminants. They are intentionally conservative and are based on a reasonable worst-case scenario for four generic land use settings.

Considering the varied land use across the Site, the following criteria are considered relevant to the Site:

- HIL A – residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake, (no poultry), also includes children's day care centres, preschools, and primary schools.
- HIL B – residential with minimal opportunities for soil access includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats.
- HIL C – public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. It does not include undeveloped public open space (such as urban bushland and reserves) which should be subject to a site-specific assessment where appropriate.
- HIL D – commercial/industrial such as shops, offices, factories, and industrial sites.

For the purpose of this investigation HIL A has been adopted to provide a conservative approach to the investigation given the proposed future residential land use.

3.1.2 Ecological Criteria

For the purpose of this investigation, both ecological direct and indirect exposure scenarios have been considered. Ecological indirect exposure values for perfluorooctane sulfonic acid (PFOS) has been adopted as a conservative approach.

3.2 Water

The PFAS National Environment Plan (Version 2.0 – January 2020) ecological water quality guideline (interim marine) values were adopted for the groundwater assessment at the Site. SMEC consider that the 95% criteria for species protection within a slightly to moderately disturbed system is considered appropriate for the receiving environment (Snake Creek).

It is noted that the PFAS NEMP (2020) considers the bio accumulative nature of PFAS and suggests that 99% be used for slightly to moderately disturbed ecosystems. Due to the extremely low laboratory limits of reporting required to assess with respect to these criteria, SMEC have adopted 95% protection levels as Tier 1 investigation levels. Where investigation levels are exceeded, the bioaccumulation potential of this contaminant would be considered as part of Tier 2 assessment within a Human Health and Ecological Risk Assessment (if required).

4. Field and Laboratory Investigation

Field investigations were undertaken on 22 June 2022. The following was carried out as part of the investigation works:

- Excavation of five test pits to a maximum depth of 2 metres below ground level (m bgl), or refusal. The excavation of five test pits was completed along the north western Site boundary (nearest to the rural fire service).
- Surface water sampling at one location on Snake Creek.

The sampling locations are presented in **Figure 2, Appendix A**.

Fieldwork was attended on a full-time basis by a trained environmental engineer. All SMEC personnel carried out fieldworks in accordance with the SMEC Safe Work Method Statements (SWMS).

4.1 Test Pits

The excavation of five test pits was completed along the north western Site boundary (nearest to the rural fire service). With the following procedure adopted for test pitting:

- Before You Dig (BYD) plans were reviewed prior to breaking ground at each proposed test pit location.
- An accredited service locator carried out services clearance at each proposed investigation location.
- The test pits were located along the north west boundary of the Site, at approximately 80m spacing.
- Each test pit was excavated from the ground surface to a maximum of 2m bgl or refusal, with a maximum depth of 1.9m bgl achieved during the investigation works.
- Careful attention was made to the preparation of the sidewalls of the test pits prior to logging and photographing to ensure the accuracy of discrete layers is obtained. Soils were logged using the Unified Soil Classification Systems (USCS) in general accordance with SMEC standard operating procedures.
- After completion, the test pits were backfilled with excavation spoil to the final depth to surface. The ground surface was reinstated as far as reasonably practicable to match the surrounding grassed areas, at the time of fieldwork.

4.2 Soil Sampling

Soil samples were collected from the test pits to inform the assessment. The following procedure was adopted for soil sampling:

- Prior to sample collection, the field Engineer donned a clean, new pair of disposable nitrile gloves. A new pair of nitrile gloves was worn for each different sampling location.
- Soil samples were collected directly by hand, from material that had not touched the excavator bucket.
- Soil samples were generally collected at regular intervals down the soil profile (typically one at the surface, one at 0.5m, and every metre after that).
- Sample depths were adjusted to target specific layers (such as changes in stratigraphy, more permeable layers or if there was a suspect layer/material or visual/olfactory evidence of contamination, if relevant).
- A visual assessment was made of encountered soil material for the potential presence of contamination indicators such as staining, odours, buried wastes or suspected asbestos containing materials (ACM) contamination.
- Each soil sample for PFAS testing was collected within laboratory supplied 250mL HDPE containers (no Teflon).

4.3 Surface Water

Surface water sampling comprised the following method:

- Surface water samples were collected directly from the water surface by filling sample bottles. Samples were placed into laboratory supplied containers.
- Site photographs were taken at each location.
- All samples were collected directly into laboratory supplied sample containers suitable for the respective analysis required.

4.4 Groundwater Seepage

It is noted that the investigation works scope included collection of groundwater seepage samples, from groundwater which has seeped into test pits. At the time of sampling all test pits were dry, with groundwater seepage samples unable to be collected.

4.5 Field and Laboratory Testing Schedule

Samples for contamination testing were submitted to the Eurofins Services (16 Mars Road, Lane Cove West, NSW, 2066) for analysis. The laboratory is accredited by the National Association of Testing Authorities Australia (NATA) for the tests to be performed.

A summary of testing quantities is provided in **Table 4-1**.

Table 4-1 Summary of testing quantities.

Media	Analysis	Number of Samples	Comments
Soil	PFAS	8 Primary Samples	2 samples at test pits TP01, TP03, and TP04 1 sample at test pits TP02 and TP05
Surface Water	PFAS	1 Primary Sample 1 Duplicate Sample	1 sample collected from Snake Creek

5. Quality Assurance and Quality Control

Quality assurance and quality control was carried out generally as per the SAQP based in general accordance with NEPM 1999 and PFAS NEMP 2020 requirements. Data quality indicators (DQIs) are presented in **Appendix D**.

5.1 Sample Handling, Storage and Transportation

Sampling of soil and water was carried out by trained and experienced environmental staff using sampling protocols which minimise potential cross contamination occurring in between sampling locations.

During fieldworks, samples were placed in an ice-filled chest to keep the samples below the recommended preservation temperature of approximately 6 °C. Samples were kept cool in ice chests with ice until delivered to the Eurofins Girraween office, where samples were refrigerated.

Samples, including QA samples, were transported to the laboratories with relevant Chain of Custody (CoC) documentation. The CoC form was completed with the sample names, sampling date and required analyses. The samples were sent in a sealed ice chest to the laboratory for analysis within the prescribed analyte holding times.

5.2 Equipment Decontamination

Reusable sampling equipment was not used during this sampling event. Thus, equipment decontamination was not required.

5.3 Methods

Analytical methods were in accordance with PFAS NEMP 2.0 (2020) testing procedures as specified in the laboratory reports presented in Appendix F.

5.4 Trip Blank and Trip Spike Samples

One laboratory-prepared water PFAS trip blank was taken into the field, transported and analysed together with samples collected within this project. The trip blank was analysed for PFAS suite.

Laboratory QA/QC, including matrix spikes, laboratory method blanks and laboratory duplicates, were performed in accordance with the laboratory NATA accreditation and the requirements of the ASC NEPM, 2013 and NEMP.

5.5 Field Duplicate Samples

Duplicate samples were collected and tested for each analyte to assess precision in field sampling techniques and laboratory methods. Duplicate samples (comprising both inter and intra-laboratory) were analysed at a frequency as follows:

- PFAS only – Minimum of 1 in every 10 samples as recommended in NEMP (i.e. Analysis of intra-laboratory (10%) and inter-laboratory duplicates (10%)).

Table 5-1 below provides a summary of the duplicate identification and analysis.

Table 5-1 Field Duplicate Samples.

Primary Sample ID	Media	Duplicate ID	Type	Analysis
SC01	Surface water	DUP01	Intra lab duplicate	PFAS

It is noted that the minimum frequency of inter-laboratory duplicates (PFAS only) (10%) was not obtained for soil samples for this batch (refer to **Section 5.7** for details). However, given errors in laboratory QA, and the consistency of concentrations across the data set, the data is considered to be adequate and usable for the purpose of this assessment.

Results of relative percent differences (RPDs) are included in **Table E3, Appendix E**.

5.6 PFAS Protocols

The following additional protocols were adopted for all fieldwork due to soil and groundwater samples requiring analysis for PFAS:

- Prior to sampling, the sampling personnel washed their hands with plain soap and rinsed thoroughly in tap water before donning a clean, new pair of disposable nitrile gloves.
- Field clothes – were not new (i.e. had been washed minimum of six times).
- No stain resistant, water resistant/waterproof coatings or treated fabric were used.
- No Teflon products were used.
- No fast food wrappers, pre-wrapped foods (only rigid plastic or stainless-steel containers) were permitted on Site.
- No aluminium foil was permitted to be used.
- No 'post it' notes were permitted to be used.
- No reusable chemical ice packs were permitted to be used.
- No sunscreen, moisturiser or cosmetics were used.

5.7 Field and Laboratory QAQC

The following DQI non-compliances were noted within field or laboratory QAQC:

- It is noted that the minimum frequency of inter-laboratory duplicates (PFAS only) (10%) was not met for this batch. It is noted that there was overall good correlation between field duplicate RPDs for this batch. Thus, this is not expected to affect the useability of this data set.

5.7.1 QAQC Summary

Based on the above data evaluation, SMEC consider the data to be useable for the purposes of this assessment.

6. Field and Laboratory Results

6.1 Subsurface Conditions

Photographs of typical soil profiles and examples of the soil material observed during sampling are included in **Appendix B**. Test pit logs are presented in **Appendix C**.

The generalised subsurface conditions encountered at the sampling locations are summarised in **Table 6-1** below.

Table 6-1 General Summary of Subsurface Conditions.

Unit	Typical depth to Top of Unit (m bgl)	Indicative Thickness (m)	Typical Description	Location and Photo Reference (Appendix B)
TOPSOIL	0.00	~0.10-0.50	SAND with clay or CLAY	TP02, TP03 Photos 7-15
RESIDUAL SOIL	0.00 – 0.60	~0.10-1.90	SAND or SAND trace clay	All locations Photos 1-24
WEATHERED MATERIAL	0.20-1.30	N/A	SANDSTONE (highly weathered)	All locations Photos 1-24

No unusual staining or odours were observed during the sampling. No visual indicators of suspected asbestos containing material (ACM) were noted at the sampling locations.

6.2 Laboratory Results

6.2.1 Soil

Tabulated analytical results for soil analysis are summarised in **Table E1, Appendix E**. The laboratory analysis for reports are included in **Appendix F**.

All concentrations of PFAS compounds were detected below the laboratory limit of reporting. The laboratory reporting limits were below the respective adopted Site assessment criteria.

6.2.2 Surface Water

Photographs of the Snake Creek surface water sampling location are included in **Appendix B** (photos 25-27). Tabulated analytical results for surface water analysis are summarised in **Table E2, Appendix E**. The laboratory analysis for reports are included in **Appendix F**.

All concentrations of PFAS compounds were detected below the laboratory limit of reporting. The laboratory reporting limits were below the respective adopted Site assessment criteria.

7. Conclusions

An additional PFAS investigation was undertaken to address data gaps regarding the potential for PFAS at the site identified during the PSI (SMEC 2022). The conclusions of the investigation are as follows:

- The Belrose RFS was contacted in order to assess if there was a history of use of PFAS substances at the Site. The NSW RFS noted that there was no record of use or storage of any PFAS base foams at the Belrose RFS base.
- This was generally in accordance with the analytical results from sampled material, whereby PFAS was not recorded in soil or surface water from testing by SMEC during this investigation.
- These results suggest that PFAS is unlikely to pose an unacceptable risk to health or the environment, at the Site. Soil remediation at the Site is currently not considered warranted.

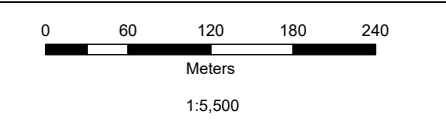
As such, based on the results of this investigation, PFAS is not considered to be present at the site in concentrations which may pose a risk to human health and the environment as a result of activities at the Rural Fire Service

8. References

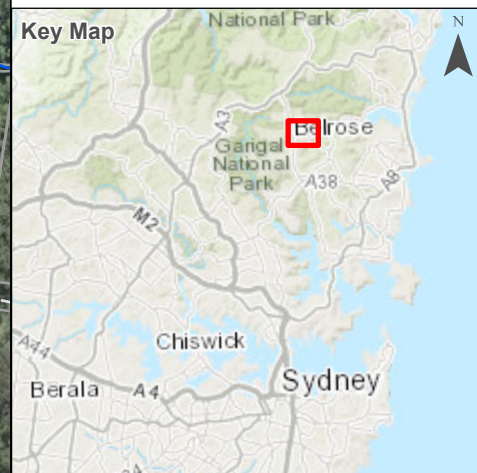
NEMP 2020, PFAS National Environmental Management Plan 2.0, Department of Agriculture, Water, and the Environment.

SMEC 2020 Belrose Residential Development Preliminary Site Investigation Reference No. 30012988, dated 05 November 2020.

Appendix A. Figures



- Legend**
- Site Boundary
 - Cadastre
 - Watercourse
 - Road
 - Vehicular Track



- SOURCES:**
1. Roads and Waterways © Six Maps 2020
 2. Basemap © Australia latest:
World Topographic Map: Esri, HERE, Garmin, USGS, NGA
 3. MetroMap Imagery © Aerometrex Pty Ltd

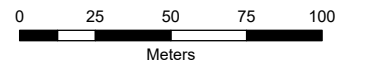
© SMEC Australia Pty Ltd 2019. All Rights Reserved
Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.

PROJECT: Patyegarang Project
PROJECT NO: 30018048
FIGURE NO: 1
FIGURE TITLE: Site Location
CREATED BY: FA13847
DATE: 30/06/2022
VERSION: REV 0
PAGE SIZE: A3



Member of the Surlana Jurong Group

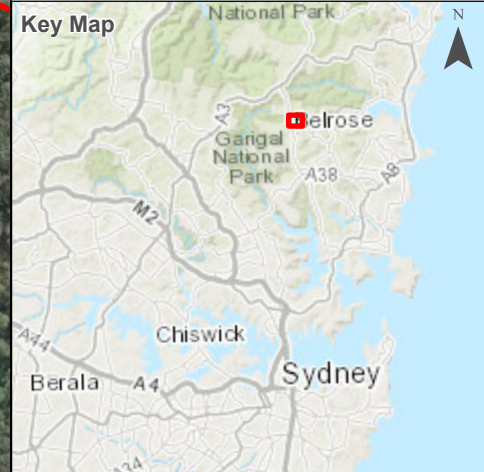
SMEC AUSTRALIA PTY LTD
ABN 47 065 475 149



1:2,500

Legend

- Site Boundary
- Watercourse
- Road
- Vehicular Track
- + Approximate Location of Test Pit
- Approximate Location of Surface Water Sample



- SOURCES:**
1. Roads and Waterways © Six Maps 2020
 2. Basemap © Australia latest:
World Topographic Map: Esri, HERE, Garmin, USGS, NGA
 3. MetroMap Imagery © Aerometrex Pty Ltd

© SMEC Australia Pty Ltd 2019. All Rights Reserved
Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the information contained on this is free from error or omission. Any reliance placed on such information shall be at the sole risk of the user. Please verify the accuracy of all information prior to using it. This map is not a design document.

PROJECT: Patyegarang Project
PROJECT NO: 30018048
FIGURE NO: 2
FIGURE TITLE: Sample Location
CREATED BY: FA13847
DATE: 30/06/2022
VERSION: REV 0
PAGE SIZE: A3

Appendix B. Photographic Log

Appendix B: Photographic Log



Photo 1: 29/06/2022 Location of test pit TP01.



Photo 2: 29/06/2022 Location of test pit TP01.



Photo 3: 29/06/2022 Test pit TP01.



Photo 4: 29/06/2022 Test pit TP01.

Appendix B: Photographic Log



Photo 5: 29/06/2022 Example of spoil material from test pit TP01.



Photo 6: 29/06/2022 Example of spoil material from test pit TP01.



Photo 7: 29/06/2022 Location of test pit TP02.



Photo 8: 29/06/2022 Test pit TP02.

Appendix B: Photographic Log



Photo 9: 29/06/2022 Test pit TP02.



Photo 10: 29/06/2022 Example of spoil material from test pit TP02.



Photo 11: 29/06/2022 Location of test pit TP03.



Photo 12: 29/06/2022 Test pit TP03.

Appendix B: Photographic Log



Photo 13: 29/06/2022 Test pit TP03.



Photo 14: 29/06/2022 Test pit TP03.



Photo 15: 29/06/2022 Glass bottle observed at test pit TP03.



Photo 16: 29/06/2022 Location of test pit TP04.

Appendix B: Photographic Log



Photo 17: 29/06/2022 Location of test pit TP04.



Photo 18: 29/06/2022 Test pit TP04.



Appendix B: Photographic Log



Photo 21: 29/06/2022 Location of test pit TP05.



Photo 22: 29/06/2022 Test pit TP05.



Appendix B: Photographic Log



Photo 25: 29/06/2022 Snake Creek – surface water sample location.



Photo 26: 29/06/2022 Snake Creek – surface water sample location.



Photo 27: 29/06/2022 Snake Creek – surface water sample location.

Appendix C. Test Pit Logs

Test Pit ID	TP01
Logged Date	22/06/2022
Total Depth (m)	1.90

Sample ID	Depth (mbgl)	Material Description	Other Comments
TP01/0-0.1m	0.00	SAND, brown, medium-coarse grained, loose	RESIDUAL SOIL
TP01/0.5-0.7m			0.50m: slightly moist
TP01/0.9-1m	0.60	SANDSTONE, extremely weathered, grey-white	WEATHERED MATERIAL
TP01/1.8-1.9m			
	1.90	<i>Test Pit terminated at 1.90m, refusal.</i>	

Test Pit ID	TP02
Logged Date	22/06/2022
Total Depth (m)	0.30

Sample ID	Depth (mbgl)	Material Description	Other Comments
TP02/0-0.1m	0.00	SAND with clay, dark brown, fine-coarse grained, with medium plasticity clay	TOPSOIL
			0.0m: slightly moist
	0.10	SAND trace clay, orange, medium-coarse grained	RESIDUAL SOIL
			0.1m: moist
	0.20	SANDSTONE, highly weathered, orange mottled red	WEATHERED MATERIAL
	0.30	<i>Test Pit terminated at 0.30m, refusal.</i>	

Test Pit ID	TP03
Logged Date	22/06/2022
Total Depth (m)	1.00

Sample ID	Depth (mbgl)	Material Description	Comments
TP03/0-0.1m	0.00	CLAY, dark brown, medium plasticity, with fine to medium grained sand, with silt	TOPSOIL
			0.0m: glass shards observed, slightly moist
TP03/0.5-0.7m	0.50	SANDSTONE, highly weathered, orange mottled red	WEATHERED MATERIAL
			0.5m: glass bottle observed
TP03/0.9-1.0m	1.00	<i>Test Pit terminated at 1.00m, refusal.</i>	

Test Pit ID	TP04
Logged Date	22/06/2022
Total Depth (m)	1.50

Sample ID	Depth (mbgl)	Material Description	Comments
TP04/0-0.1m	0.00	SAND, light brown, fine to medium grained	RESIDUAL SOIL
			0.0m: slightly moist
	0.40	SAND, orange mottled red mottled grey, fine to medium grained	
TP04/0.5-0.6m	0.50	SANDSTONE, highly weathered, orange mottled red mottled grey with some brown to black streaks.	WEATHERED MATERIAL
TP04/1-1.2m			
	1.50	<i>Test Pit terminated at 1.50m, refusal.</i>	

Test Pit ID	TP05
Logged Date	22/06/2022
Total Depth (m)	1.80

Sample ID	Depth (mbgl)	Material Description	Other Comments
TP05/0-0.1m	0.00	SAND, brown, fine to medium grained, trace low to medium plasticity clay, loose	RESIDUAL SOIL
	0.10	Clayey SAND, brown, fine to medium grained sand, low to medium plasticity clay, compact	
	0.30	SAND, white mottled-grey-orange-red, fine to medium grained, very firm possibly rock at 1.3m	
TP05/0.5-0.6m			
TP05/1.2-1.3m	1.30	SANDSTONE, highly heathered, grey mottled orange	WEATHERED MATERIAL
	1.80	<i>Test Pit terminated at 1.80m, refusal.</i>	

Appendix D. DQIs

DQIs for the project will be based on the field and laboratory considerations in NEPM Schedule B2 Appendix B, (NEPC 1999), which include:

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

The DQIs adopted for this assessment and checking of compliance is discussed in the tables below.

Completeness					
Field considerations	DQI	DQI Compliance	Laboratory considerations	DQI	DQI Compliance
All critical locations will be sampled	Samples will be collected as per Section 4	Yes	All critical samples analysed.	Samples will be analysed as per Section 4.5	Yes
All samples collected	Samples will be collected from relevant media as per Section SAQP	Yes	All analytes analysed according to sampling plan.	Samples will be analysed as per SAQP	Yes
Standard Operating Procedures (SOPs) appropriate and complied with	SMEC SOPs/Field instructions will be implemented.	Yes	Appropriate methods and limits of reporting .	Samples will be analysed by laboratories NATA accredited for the analyses to be performed and appropriate methods will be used. LORs were less than or equal to the assessment criteria.	Yes
Experienced sampler	An experienced SMEC environmental consultant will conduct the sampling.	Yes	Sample documentation complete	CoCs will be returned, signed and dated by laboratory. NATA endorsed laboratory certificates were completed in accordance with NEPC (1999). Field documentation was completed in accordance with SMEC SOPs/Field instructions.	Yes (refer to Appendix F)
Documentation correct	Samples will be handled and transported under appropriate chain of custody documentation. Sample Receipt Advice (SRA) (or equivalent) from the laboratory will be reviewed to assess that samples are received cool and in good condition. Calibration certificates for the field instruments will be provided on a daily basis.	Yes, with some exceptions.	Sample holding times complied with.	Samples will be analysed within holding times specified by NEPC (1999, amended 2013)	Yes

Comparability					
Field considerations	DQI	DQI Compliance	Laboratory considerations	DQI	DQI Compliance
Same SOPs/Field instructions used on each occasion	SMEC SOPs/Field instructions will be implemented.	Yes	Same sample analytical methods used.	The same NATA accredited laboratory will be used to undertake analyses of all primary samples collected for this study. The laboratory used the same analytical methods for each sample for each analytical parameter.	Yes
Experienced sampler	An experienced SMEC environmental consultant will conduct the sampling.	Yes	Same sample LOR.		Yes
Climatic conditions (temperature, rainfall, wind, barometric pressure...)	Where practical soil and water sampling will be carried out whilst not raining. Sampling for this work will be completed when necessary. Climatic conditions are not expected to cause issues for comparability of data	Yes	Same laboratories.		Yes
Same types of samples collected	Samples will be collected in the appropriate laboratory supplied container specific to the analyses performed.		Same units.		Yes

Representativeness					
Field considerations	DQI	DQI Compliance	Laboratory considerations	DQI	DQI Compliance
Appropriate media sampled according to sample plan	Samples will be collected and analysed as per SAQP. Any variations will be justified.	N/A – no SAQP for this project	All samples analysed according to sample plan.	Samples will be collected and analysed as per SAQP. NATA Accredited environmental testing laboratories will implement a quality control plan conforming to Schedule B(3) 'Guideline on Laboratory Analysis of Potentially Contaminated Soils' of the National Environment Protection (Assessment of Site Contamination Measure 1999 as amended (NEPC, 1999).	N/A – no SAQP for this project
All media identified in sample plan sampled	Samples will be collected and analysed as per SAQP	N/A	All samples analysed according to sample plan.	Samples will be collected and analysed as listed in the SAQP.	N/A – no SAQP for this project

Precision					
Field considerations	DQI	DQI Compliance	Laboratory considerations	DQI	DQI Compliance
SOPs appropriate and complied with	SMEC SOPs/Field instructions will be implemented	Yes	Analysis of: laboratory duplicates.	The number of duplicate analyses should be the smaller of one per process batch or one per 10 samples.	Yes
Analysis of: field duplicates	Collection of field duplicate samples including: Field intra-laboratory duplicate samples (1 in 10 samples for PFAS and 1 in 20 samples for other contaminants). Field inter-laboratory duplicate samples (1 in 10 samples for PFAS and 1 in 20 samples for other contaminants).	No – inter-laboratory duplicate samples not collected for soil samples, refer to Section 5.7 for details.	Analysis of: field duplicates.	Field duplicates relative percentage difference (RPD) control limits: <ul style="list-style-type: none"> Less than 50%, where result is greater than 10 times limit of reporting (LOR). No limit where result is less than 10 times LOR. 	Yes
	Experienced and trained staff to carry out sampling. Sampling methodologies appropriate and complied with.	Yes	Analysis of: laboratory duplicates	Laboratory duplicates RPD control limits: Results <10 times the LOR: No Limit Results between 10-20 times the LOR: RPD must lie between 0-50% Results >20 times the LOR: RPD must lie between 0-30% In accordance with laboratory specific QC Acceptance criteria.	Yes
			Analysis of: laboratory-prepared trip spikes.	At least one BTEX trip spike per soil sampling and water quality monitoring event was analysed for volatile contaminants (BTEX). Recovery to be 70-130%.	N/A – volatile contaminants not assessed as part of this investigation.
			Analysis of: laboratory-prepared trip blanks.	At least one trip blank per sampling event was analysed for PFAS. Blanks to be <LOR.	Yes

Accuracy (bias)					
Field considerations	DQI	DQI Compliance	Laboratory considerations	DQI	DQI Compliance
SOP appropriate and complied with	SMEC SOPs/Field instructions will be implemented	Yes	Analysis of field blanks	One PFAS water trip blank will be taken into the field, transported and analysed together with samples collected within this project. The trip blank sample will be analysed for PFAS. Results are to be less than the LOR.	Yes
Rinsate blank	Where reusable sampling equipment is utilised (if any) a rinsate blank will be analysed and results compared against the practical quantitation limit (PQL).	Yes	Analysis of method blank	Method blanks will be analysed as per NEPC (1999) at least 1 per process batch (typically 1 in 20, 1 in 10 for PFAS). Results to be less than LOR	Yes
Trip spike	One BTEX trip spike will be taken in the field and analysed. DQI - recoveries to be within 70% - 130% for organics	Yes	Analysis of matrix spike	Matrix spikes will be analysed as per NEPC (1999) (one matrix spike per soil type per process batch). Results were within laboratory acceptance limits based on NEPC (1999). Acceptance limits are on the laboratory certificates (typically 70-130%, depends on analyte. A lower range typically accepted for phenols 30%-130%)	Yes
Preservation, transport and storage	Samples appropriately preserved in laboratory supplied containers, stored and transported correctly and within holding times	Yes	Analysis of surrogate spike	Surrogates will be analysed as per NEPC Schedule B3 (1999). All samples spiked where appropriate (e.g. chromatographic analysis of organics). Acceptance limits 70% to 130% (inorganics), or 50% to 150% (organics).	Yes
		Yes	Analysis of laboratory control samples (LCS)	LCSs will be analysed as per NEPC Schedule B3 (1999) (at least 1 per batch). Results were within laboratory acceptance limits based on NEPC (1999). Acceptance limits are on the laboratory certificates (typically 70-130%, depends on analyte)	Yes
		Yes	Analysis of laboratory-prepared spikes (LPS)	LPS will be analysed as per NEPC Schedule B3 (1999). Recovery results were within laboratory acceptance limits based on NEPC Schedule B3 (1999). Acceptance limits are on the laboratory certificates.	Yes

Appendix E. Analytical Summary Tables

	Inorganics	(n:2) Fluorotelomer Sulfonic Acids				PFAS					Perfluoroalkane Carboxylic Acids													
		Moisture Content (dried @ 103°C)	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)	Perfluorononanesulfonic acid (PFNS)	Sum of PFHxS and PFOS	Sum of PFAS	Sum of PFAS (WA DER List)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)	Sum of PFAS (PFOS + PFOA)	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 (PFTDA)	Perfluoroundecanoic acid (PFUnDA)	
	%	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	1	0.005	0.01	0.005	0.005	5	0.005	0.05	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)							0.01																	
PFAS NEMP 2020 Ecological guideline values for soil - Direct Exposure																								
PFAS NEMP 2020 Ecological guideline values for soil - Indirect Exposure																								

Sample ID	Sample Date	Lab Report Number																						
TP01/0.5-0.7M	22/06/2022	899779	12	<0.005	<0.01	<0.005	<0.005	<5	<0.005	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TP01/1.8-1.9M	22/06/2022	899779	18	<0.005	<0.01	<0.005	<0.005	<5	<0.005	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TP02/0-0.1M	22/06/2022	899779	19	<0.005	<0.01	<0.005	<0.005	<5	<0.005	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TP03/0.5-0.7M	22/06/2022	899779	16	<0.005	<0.01	<0.005	<0.005	<5	<0.005	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TP03/0.9-1M	22/06/2022	899779	17	<0.005	<0.01	<0.005	<0.005	<5	<0.005	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TP04/0-0.1M	22/06/2022	899779	9.0	<0.005	<0.01	<0.005	<0.005	<5	<0.005	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TP04/1-1.2M	22/06/2022	899779	11	<0.005	<0.01	<0.005	<0.005	<5	<0.005	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TP05/0.5-0.6M	22/06/2022	899779	18	<0.005	<0.01	<0.005	<0.005	<5	<0.005	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Statistics																								
Number of Results	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
Number of Detects	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Minimum Concentration	9	<0.005	<0.01	<0.005	<0.005	<5	<0.005	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Minimum Detect	9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Maximum Concentration	19	<0.005	<0.01	<0.005	<0.005	<5	<0.005	<0.05	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Maximum Detect	19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Average Concentration *	15	0.0025	0.005	0.0025	0.0025	2.5	0.0025	0.025	0.005	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	
Geometric Average *	15	0.0025	0.005	0.0025	0.0025	2.5	0.0025	0.025	0.005	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	
Median Concentration *	16.5	0.0025	0.005	0.0025	0.0025	2.5	0.0025	0.025	0.005	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	
Standard Deviation *	3.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Geometric Standard Deviation *	1.3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
95% UCL (Student's-t) *	17.53	0.0025	0.005	0.0025	0.0025	2.5	0.0025	0.025	0.005	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	
% of Detects	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% of Non-Detects	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	

* A Non Detect Multiplier of 0.5 has been applied.

	Perfluoroalkane Sulfonic Acids							Perfluoroalkyl Sulfonamides						
	Perfluoropropanesulfonic acid (PFPS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecane sulfonic acid (PFDS)	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)
	mg/kg	mg/kg	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	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.01	0.005
PFAS NEMP 2020 Residential with garden/accessible soil (HIL A)														
PFAS NEMP 2020 Ecological guideline values for soil - Direct Exposure						1								
PFAS NEMP 2020 Ecological guideline values for soil - Indirect Exposure						0.01								

Sample ID	Sample Date	Lab Report Number	Perfluoropropanesulfonic acid (PFPS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecane sulfonic acid (PFDS)	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)
TP01/0.5-0.7M	22/06/2022	899779	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005
TP01/1.8-1.9M	22/06/2022	899779	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005
TP02/0-0.1M	22/06/2022	899779	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005
TP03/0.5-0.7M	22/06/2022	899779	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005
TP03/0.9-1M	22/06/2022	899779	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005
TP04/0-0.1M	22/06/2022	899779	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005
TP04/1-1.2M	22/06/2022	899779	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005
TP05/0.5-0.6M	22/06/2022	899779	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005

Statistics																
Number of Results	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<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	<0.01	<0.005
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<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	<0.01	<0.005
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration *	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.005	0.0025	0.0025	0.005	0.0025
Geometric Average *	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.005	0.0025	0.0025	0.005	0.0025
Median Concentration *	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.005	0.0025	0.0025	0.005	0.0025
Standard Deviation *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Geometric Standard Deviation *	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
95% UCL (Student's-t) *	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.005	0.0025	0.0025	0.005	0.0025
% of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% of Non-Detects	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

* A Non Detect Multiplier of 0.5 has been applied.

	(n:2) Fluorotelomer Sulfonic Acids				Perfluoroalkane Carboxylic Acids										Perfluoroalkane Sulfonic Acids							
	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)	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)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorodecane sulfonic acid (PFDS)
EQI	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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 95%	0.01	0.05	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
									220													0.13

Sample ID	Sample Date	Lab Report Number	<0.01	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
DUP01	22/06/2022	899779	<0.01	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
FIELD REAGENT BLANK	22/06/2022	899779	<0.01	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SC01	22/06/2022	899779	<0.01	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Perfluoroalkyl Sulfonamides							PFAS					
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)	Perfluorononanesulfonic acid (PFNS)	Sum of PFHxS and PFOS	Sum of PFAS	Sum of PFAS (WA DER List)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)	Sum of PFAS (PFOS + PFOA)
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQI	0.05	0.05	0.05	0.05	0.05	0.05	0.01	0.01	0.1	0.05	0.01	0.01
PFAS NEMP 2020 Freshwater 95%												

Sample ID	Sample Date	Lab Report Number	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)	Perfluorononanesulfonic acid (PFNS)	Sum of PFHxS and PFOS	Sum of PFAS	Sum of PFAS (WA DER List)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)	Sum of PFAS (PFOS + PFOA)
DUP01	22/06/2022	899779	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01
FIELD REAGENT BLANK	22/06/2022	899779	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01
SC01	22/06/2022	899779	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.1	<0.05	<0.01	<0.01

	Unit	EQL	Sample ID	SC01	DUP01	RPD
			Sample Date	22/06/2022	22/06/2022	
			Lab Report Number	899779	899779	
			Matrix	Water	Water	
(n:2) Fluorotelomer Sulfonic Acids						
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01	<0.01	<0.01	0	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.05	<0.05	<0.05	0	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.01	<0.01	<0.01	0	
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01	<0.01	<0.01	0	
Perfluoroalkane Carboxylic Acids						
Perfluorobutanoic acid (PFBA)	µg/L	0.05	<0.05	<0.05	0	
Perfluorohexanoic acid (PFHxA)	µg/L	0.01	<0.01	<0.01	0	
Perfluoropentanoic acid (PFPeA)	µg/L	0.01	<0.01	<0.01	0	
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	<0.01	<0.01	0	
Perfluorooctanoic acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	
Perfluorodecanoic acid (PFDA)	µg/L	0.01	<0.01	<0.01	0	
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	<0.01	<0.01	0	
Perfluorononanoic acid (PFNA)	µg/L	0.01	<0.01	<0.01	0	
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	<0.01	<0.01	0	
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01	<0.01	<0.01	0	
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	<0.01	<0.01	0	
Perfluoroalkane Sulfonic Acids						
Perfluoropropanesulfonic acid (PFPrS)	µg/L	0.01	<0.01	<0.01	0	
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	<0.01	<0.01	0	
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	<0.01	<0.01	0	
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	0	
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	<0.01	<0.01	0	
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	0	
Perfluorodecane sulfonic acid (PFDS)	µg/L	0.01	<0.01	<0.01	0	
Perfluoroalkyl Sulfonamides						
Perfluorooctane sulfonamide (FOSA)	µg/L	0.05	<0.05	<0.05	0	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.05	<0.05	<0.05	0	
N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.05	<0.05	<0.05	0	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	
PFAS						
Perfluorononanesulfonic acid (PFNS)	µg/L	0.01	<0.01	<0.01	0	
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	0	
Sum of PFAS	µg/L	0.1	<0.1	<0.1	0	
Sum of PFAS (WA DER List)	µg/L	0.05	<0.05	<0.05	0	
Sum of enHealth PFAS (PFHxS + PFOA + PFOA)	µg/L	0.01	<0.01	<0.01	0	
Sum of PFAS (PFOS + PFOA)	µg/L	0.01	<0.01	<0.01	0	

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 999 (1 - 10 x EQL); 30 (10 - 20 x EQL); 30 (> 20 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Appendix F. Laboratory Reports

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne 6 Monterey Road Dandenong South VIC 3175 Phone : +61 3 8564 5000 NATA # 1261 Site # 1254	Sydney 179 Magowar Road Girraween NSW 2066 Phone : +61 2 9900 8400 NATA # 1261 Site # 18217	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 Phone : +61 7 3902 4600 NATA # 1261 Site # 20794
---	--	---

Newcastle 4/52 Industrial Drive Mayfield East NSW 2304 PO Box 60 Wickham 2293 Phone : +61 2 4968 8448 NATA # 1261 Site # 25079
--

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth 46-48 Banksia Road Welshpool WA 6106 Phone : +61 8 6253 4444 NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited

NZBN: 9429046024954

Auckland 35 O'Rorke Road Penrose, Auckland 1061 Phone : +64 9 526 45 51 IANZ # 1327	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Phone : 0800 856 450 IANZ # 1290
--	--

Sample Receipt Advice

Company name:	SMEC Australia Pty Ltd (SYD)
Contact name:	STEVEN DRYSDALE
Project name:	BELROSE MORGAN ROAD PFAS INVESTIGATION
Project ID:	30018048
Turnaround time:	3 Day
Date/Time received	Jun 22, 2022 6:08 PM
Eurofins reference	899779

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 3.4 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Sample Blank (PFAS water bottle) received empty, Cancelled. |
Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Emma Beesley on phone : or by email: EmmaBeesley@eurofins.com

Results will be delivered electronically via email to STEVEN DRYSDALE - STEVEN.DRYSDALE@SMEC.COM.

Note: A copy of these results will also be delivered to the general SMEC Australia Pty Ltd (SYD) email address.



Environment Testing

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
179 Magowar Road
Girraween NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited

NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: SMEC Australia Pty Ltd (SYD)
Address: Level 6, 76 Berry Street
North Sydney
NSW 2060

Order No.:
Report #: 899779
Phone: 02 9925 5555
Fax: 02 9925 5566

Received: Jun 22, 2022 6:08 PM
Due: Jun 27, 2022
Priority: 3 Day
Contact Name: STEVEN DRYSDALE

Project Name: BELROSE MORGAN ROAD PFAS INVESTIGATION
Project ID: 30018048

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254									
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		
Brisbane Laboratory - NATA # 1261 Site # 20794								X	X
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	TP01/0.5-0.7M	Jun 22, 2022		Soil	S22-Jn0050713			X	X
2	TP01/1.8-1.9M	Jun 22, 2022		Soil	S22-Jn0050714			X	X
3	TP02/0-0.1M	Jun 22, 2022		Soil	S22-Jn0050715			X	X
4	TP03/0.5-0.7M	Jun 22, 2022		Soil	S22-Jn0050716			X	X
5	TP03/0.9-1M	Jun 22, 2022		Soil	S22-Jn0050717			X	X
6	TP04/0-0.1M	Jun 22, 2022		Soil	S22-			X	X



Environment Testing

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
179 Magowar Road
Girraween NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welsphool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited

NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: SMEC Australia Pty Ltd (SYD)
Address: Level 6, 76 Berry Street
North Sydney
NSW 2060

Order No.:
Report #: 899779
Phone: 02 9925 5555
Fax: 02 9925 5566

Received: Jun 22, 2022 6:08 PM
Due: Jun 27, 2022
Priority: 3 Day
Contact Name: STEVEN DRYSDALE

Project Name: BELROSE MORGAN ROAD PFAS INVESTIGATION
Project ID: 30018048

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254									
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		
Brisbane Laboratory - NATA # 1261 Site # 20794								X	X
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
					Jn0050718				
7	TP04/1-1.2M	Jun 22, 2022		Soil	S22- Jn0050719			X	X
8	TP05/0.5-0.6M	Jun 22, 2022		Soil	S22- Jn0050720			X	X
9	SC01	Jun 22, 2022		Water	S22- Jn0050721				X
10	DUP01	Jun 22, 2022		Water	S22- Jn0050722				X
11	FIELD REAGENT BLANK	Jun 22, 2022		Water	S22- Jn0050723				X
12	TP01/0-0.1M	Jun 22, 2022		Soil	S22-		X		



Environment Testing

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
179 Magowar Road
Girraween NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited

NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: SMEC Australia Pty Ltd (SYD)
Address: Level 6, 76 Berry Street
North Sydney
NSW 2060

Project Name: BELROSE MORGAN ROAD PFAS INVESTIGATION
Project ID: 30018048

Order No.:
Report #: 899779
Phone: 02 9925 5555
Fax: 02 9925 5566

Received: Jun 22, 2022 6:08 PM
Due: Jun 27, 2022
Priority: 3 Day
Contact Name: STEVEN DRYSDALE

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254									
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		
Brisbane Laboratory - NATA # 1261 Site # 20794								X	X
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
12	TP01/0-0.1M	Jun 22, 2022		Soil	S22-Jn0050724				
13	TP01/0.9-1M	Jun 22, 2022		Soil	S22-Jn0050725		X		
14	TP03/0-0.1M	Jun 22, 2022		Soil	S22-Jn0050726		X		
15	TP04/0.5-0.6M	Jun 22, 2022		Soil	S22-Jn0050727		X		
16	TP05/0-0.1M	Jun 22, 2022		Soil	S22-Jn0050728		X		
17	TP05/1.2-1.3M	Jun 22, 2022		Soil	S22-Jn0050729		X		
18	BLANK	Jun 22, 2022		Water	S22-	X			



Environment Testing

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
179 Magowar Road
Girraween NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited

NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: SMEC Australia Pty Ltd (SYD)
Address: Level 6, 76 Berry Street
North Sydney
NSW 2060

Order No.:
Report #: 899779
Phone: 02 9925 5555
Fax: 02 9925 5566

Received: Jun 22, 2022 6:08 PM
Due: Jun 27, 2022
Priority: 3 Day
Contact Name: STEVEN DRYSDALE

Project Name: BELROSE MORGAN ROAD PFAS INVESTIGATION
Project ID: 30018048

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail					CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								
Sydney Laboratory - NATA # 1261 Site # 18217					X	X		
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
Jn0050730								
Test Counts					1	6	8	11

SMEC Australia Pty Ltd
 Level 6, 76 Berry Street
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
 NATA is a signatory to the ILAC Mutual Recognition
 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: **STEVEN DRYSDALE**

Report **899779-S**
 Project name **BELROSE MORGAN ROAD PFAS INVESTIGATION**
 Project ID **30018048**
 Received Date **Jun 22, 2022**

Client Sample ID			TP01/0.5-0.7M	TP01/1.8-1.9M	TP02/0-0.1M	TP03/0.5-0.7M
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Jn0050713	S22-Jn0050714	S22-Jn0050715	S22-Jn0050716
Date Sampled			Jun 22, 2022	Jun 22, 2022	Jun 22, 2022	Jun 22, 2022
Test/Reference	LOR	Unit				
% Moisture	1	%	12	18	19	16
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA) ^{N15}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	80	71	86	88
13C5-PFPeA (surr.)	1	%	80	79	90	90
13C5-PFHxA (surr.)	1	%	84	80	92	85
13C4-PFHpA (surr.)	1	%	80	85	85	87
13C8-PFOA (surr.)	1	%	80	82	84	85
13C5-PFNA (surr.)	1	%	87	90	96	94
13C6-PFDA (surr.)	1	%	106	107	110	109
13C2-PFUnDA (surr.)	1	%	107	109	110	117
13C2-PFDoDA (surr.)	1	%	84	87	97	104
13C2-PFTeDA (surr.)	1	%	18	67	51	76
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	85	82	80	77

Client Sample ID			TP01/0.5-0.7M	TP01/1.8-1.9M	TP02/0-0.1M	TP03/0.5-0.7M
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Jn0050713	S22-Jn0050714	S22-Jn0050715	S22-Jn0050716
Date Sampled			Jun 22, 2022	Jun 22, 2022	Jun 22, 2022	Jun 22, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D3-N-MeFOSA (surr.)	1	%	110	107	101	104
D5-N-EtFOSA (surr.)	1	%	116	118	102	107
D7-N-MeFOSE (surr.)	1	%	68	69	60	63
D9-N-EtFOSE (surr.)	1	%	80	77	71	74
D5-N-EtFOSAA (surr.)	1	%	66	98	121	106
D3-N-MeFOSAA (surr.)	1	%	41	79	89	81
Perfluoroalkyl sulfonic acids (PFASs)						
Perfluorobutanesulfonic acid (PFBS) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS) ^{N15}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS) ^{N15}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS) ^{N15}	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	87	92	89	87
18O2-PFHxS (surr.)	1	%	78	82	84	84
13C8-PFOS (surr.)	1	%	92	85	93	85
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) ^{N11}	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	86	77	121	86
13C2-6:2 FTSA (surr.)	1	%	82	84	109	93
13C2-8:2 FTSA (surr.)	1	%	92	96	95	93
13C2-10:2 FTSA (surr.)	1	%	93	90	100	97
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			TP03/0.9-1M	TP04/0-0.1M	TP04/1-1.2M	TP05/0.5-0.6M
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Jn0050717	S22-Jn0050718	S22-Jn0050719	S22-Jn0050720
Date Sampled			Jun 22, 2022	Jun 22, 2022	Jun 22, 2022	Jun 22, 2022
Test/Reference	LOR	Unit				
% Moisture	1	%	17	9.0	11	18

Client Sample ID			TP03/0.9-1M	TP04/0-0.1M	TP04/1-1.2M	TP05/0.5-0.6M
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Jn0050717	S22-Jn0050718	S22-Jn0050719	S22-Jn0050720
Date Sampled			Jun 22, 2022	Jun 22, 2022	Jun 22, 2022	Jun 22, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA) ^{N15}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	88	82	88	86
13C5-PFPeA (surr.)	1	%	93	85	93	92
13C5-PFHxA (surr.)	1	%	90	65	86	85
13C4-PFHpA (surr.)	1	%	90	59	81	83
13C8-PFOA (surr.)	1	%	87	68	87	82
13C5-PFNA (surr.)	1	%	95	70	90	88
13C6-PFDA (surr.)	1	%	113	87	101	105
13C2-PFUnDA (surr.)	1	%	116	103	110	109
13C2-PFDoDA (surr.)	1	%	102	101	100	95
13C2-PFTeDA (surr.)	1	%	76	89	77	72
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	82	67	81	78
D3-N-MeFOSA (surr.)	1	%	106	81	97	103
D5-N-EtFOSA (surr.)	1	%	110	65	100	105
D7-N-MeFOSE (surr.)	1	%	64	38	59	61
D9-N-EtFOSE (surr.)	1	%	77	49	69	77
D5-N-EtFOSAA (surr.)	1	%	103	117	115	80
D3-N-MeFOSAA (surr.)	1	%	78	72	80	60
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS) ^{N15}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS) ^{N15}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS) ^{N15}	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	92	63	86	89

Client Sample ID			TP03/0.9-1M	TP04/0-0.1M	TP04/1-1.2M	TP05/0.5-0.6M
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Jn0050717	S22-Jn0050718	S22-Jn0050719	S22-Jn0050720
Date Sampled			Jun 22, 2022	Jun 22, 2022	Jun 22, 2022	Jun 22, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSA)						
18O2-PFHxS (surr.)	1	%	85	67	81	85
13C8-PFOS (surr.)	1	%	86	100	89	85
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) ^{N11}	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N11}	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	90	^{Q09} INT	98	89
13C2-6:2 FTSA (surr.)	1	%	97	172	79	91
13C2-8:2 FTSA (surr.)	1	%	97	94	96	87
13C2-10:2 FTSA (surr.)	1	%	107	119	96	90
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture - Method: LTM-GEN-7080 Moisture	Brisbane	Jun 22, 2022	14 Days
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jun 24, 2022	28 Days
Perfluoroalkyl sulfonamido substances - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jun 24, 2022	28 Days
Perfluoroalkyl sulfonic acids (PFSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jun 24, 2022	28 Days
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Jun 24, 2022	28 Days

Company Name:	SMEC Australia Pty Ltd (SYD)	Order No.:		Received:	Jun 22, 2022 6:08 PM
Address:	Level 6, 76 Berry Street North Sydney NSW 2060	Report #:	899779	Due:	Jun 27, 2022
Project Name:	BELROSE MORGAN ROAD PFAS INVESTIGATION	Phone:	02 9925 5555	Priority:	3 Day
Project ID:	30018048	Fax:	02 9925 5566	Contact Name:	STEVEN DRYSDALE

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254									
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		
Brisbane Laboratory - NATA # 1261 Site # 20794								X	X
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	TP01/0.5-0.7M	Jun 22, 2022		Soil	S22-Jn0050713			X	X
2	TP01/1.8-1.9M	Jun 22, 2022		Soil	S22-Jn0050714			X	X
3	TP02/0-0.1M	Jun 22, 2022		Soil	S22-Jn0050715			X	X
4	TP03/0.5-0.7M	Jun 22, 2022		Soil	S22-Jn0050716			X	X
5	TP03/0.9-1M	Jun 22, 2022		Soil	S22-Jn0050717			X	X
6	TP04/0-0.1M	Jun 22, 2022		Soil	S22-			X	X

Company Name: SMEC Australia Pty Ltd (SYD)
Address: Level 6, 76 Berry Street
North Sydney
NSW 2060

Order No.:
Report #: 899779
Phone: 02 9925 5555
Fax: 02 9925 5566

Received: Jun 22, 2022 6:08 PM
Due: Jun 27, 2022
Priority: 3 Day
Contact Name: STEVEN DRYSDALE

Project Name: BELROSE MORGAN ROAD PFAS INVESTIGATION
Project ID: 30018048

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254									
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		
Brisbane Laboratory - NATA # 1261 Site # 20794								X	X
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
					Jn0050718				
7	TP04/1-1.2M	Jun 22, 2022		Soil	S22- Jn0050719			X	X
8	TP05/0.5-0.6M	Jun 22, 2022		Soil	S22- Jn0050720			X	X
9	SC01	Jun 22, 2022		Water	S22- Jn0050721				X
10	DUP01	Jun 22, 2022		Water	S22- Jn0050722				X
11	FIELD REAGENT BLANK	Jun 22, 2022		Water	S22- Jn0050723				X
12	TP01/0-0.1M	Jun 22, 2022		Soil	S22-		X		

Company Name: SMEC Australia Pty Ltd (SYD)
Address: Level 6, 76 Berry Street
North Sydney
NSW 2060

Order No.:
Report #: 899779
Phone: 02 9925 5555
Fax: 02 9925 5566

Received: Jun 22, 2022 6:08 PM
Due: Jun 27, 2022
Priority: 3 Day
Contact Name: STEVEN DRYSDALE

Project Name: BELROSE MORGAN ROAD PFAS INVESTIGATION
Project ID: 30018048

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254									
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		
Brisbane Laboratory - NATA # 1261 Site # 20794								X	X
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
12	TP01/0-0.1M	Jun 22, 2022		Soil	S22-Jn0050724				
13	TP01/0.9-1M	Jun 22, 2022		Soil	S22-Jn0050725		X		
14	TP03/0-0.1M	Jun 22, 2022		Soil	S22-Jn0050726		X		
15	TP04/0.5-0.6M	Jun 22, 2022		Soil	S22-Jn0050727		X		
16	TP05/0-0.1M	Jun 22, 2022		Soil	S22-Jn0050728		X		
17	TP05/1.2-1.3M	Jun 22, 2022		Soil	S22-Jn0050729		X		
18	BLANK	Jun 22, 2022		Water	S22-	X			

ABN: 50 005 085 521

ABN: 91 05 0159 898

NZBN: 9429046024954

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
179 Magowar Road
Girraween NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: SMEC Australia Pty Ltd (SYD)
Address: Level 6, 76 Berry Street
North Sydney
NSW 2060

Order No.:
Report #: 899779
Phone: 02 9925 5555
Fax: 02 9925 5566

Received: Jun 22, 2022 6:08 PM
Due: Jun 27, 2022
Priority: 3 Day
Contact Name: STEVEN DRYSDALE

Project Name: BELROSE MORGAN ROAD PFAS INVESTIGATION
Project ID: 30018048

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail					CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								
Sydney Laboratory - NATA # 1261 Site # 18217					X	X		
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X
Mayfield Laboratory - NATA # 1261 Site # 25079								
Perth Laboratory - NATA # 2377 Site # 2370								
External Laboratory								
Jn0050730								
Test Counts					1	6	8	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)	ug/kg	< 5		5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5		5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5		5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5		5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5		5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5		5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5		5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5		5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5		5	Pass	
Perfluorotridecanoic acid (PFTTrDA)	ug/kg	< 5		5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5		5	Pass	
Method Blank						
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5		5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5		5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5		5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5		5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5		5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10		10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10		10	Pass	
Method Blank						
Perfluoroalkyl sulfonic acids (PFASs)						
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5		5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5		5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5		5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5		5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5		5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5		5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5		5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5		5	Pass	
Method Blank						
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5		5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10		10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5		5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5		5	Pass	
LCS - % Recovery						
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)	%	83		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	85		50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	87		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	94		50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	83		50-150	Pass	
Perfluorononanoic acid (PFNA)	%	85		50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	97		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	96		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	99		50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	%	130		50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	96		50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
LCS - % Recovery								
Perfluoroalkyl sulfonamido substances								
Perfluorooctane sulfonamide (FOSA)	%	93			50-150	Pass		
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	124			50-150	Pass		
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	93			50-150	Pass		
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	128			50-150	Pass		
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	95			50-150	Pass		
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	80			50-150	Pass		
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	89			50-150	Pass		
LCS - % Recovery								
Perfluoroalkyl sulfonic acids (PFSA)								
Perfluorobutanesulfonic acid (PFBS)	%	91			50-150	Pass		
Perfluorononanesulfonic acid (PFNS)	%	103			50-150	Pass		
Perfluoropropanesulfonic acid (PFPrS)	%	83			50-150	Pass		
Perfluoropentanesulfonic acid (PFPeS)	%	86			50-150	Pass		
Perfluorohexanesulfonic acid (PFHxS)	%	91			50-150	Pass		
Perfluoroheptanesulfonic acid (PFHpS)	%	102			50-150	Pass		
Perfluorooctanesulfonic acid (PFOS)	%	87			50-150	Pass		
Perfluorodecanesulfonic acid (PFDS)	%	92			50-150	Pass		
LCS - % Recovery								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)								
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	90			50-150	Pass		
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	96			50-150	Pass		
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	86			50-150	Pass		
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	81			50-150	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Perfluoroalkyl carboxylic acids (PFCAs)								
Perfluorobutanoic acid (PFBA)	B22-Jn0053121	NCP	%	82		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B22-Jn0053121	NCP	%	86		50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B22-Jn0053121	NCP	%	88		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B22-Jn0053121	NCP	%	87		50-150	Pass	
Perfluorooctanoic acid (PFOA)	B22-Jn0053121	NCP	%	89		50-150	Pass	
Perfluorononanoic acid (PFNA)	B22-Jn0053121	NCP	%	85		50-150	Pass	
Perfluorodecanoic acid (PFDA)	B22-Jn0053121	NCP	%	98		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B22-Jn0053121	NCP	%	100		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B22-Jn0053121	NCP	%	90		50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B22-Jn0053121	NCP	%	134		50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B22-Jn0053121	NCP	%	98		50-150	Pass	
Spike - % Recovery								
Perfluoroalkyl sulfonamido substances								
Perfluorooctane sulfonamide (FOSA)	B22-Jn0053121	NCP	%	89		50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B22-Jn0053121	NCP	%	127		50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B22-Jn0053121	NCP	%	93		50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B22-Jn0053121	NCP	%	120		50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B22-Jn0053121	NCP	%	89		50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B22-Jn0053121	NCP	%	82			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B22-Jn0053121	NCP	%	88			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSA)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B22-Jn0053121	NCP	%	75			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B22-Jn0053121	NCP	%	112			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B22-Jn0053121	NCP	%	75			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B22-Jn0053121	NCP	%	76			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B22-Jn0053121	NCP	%	87			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B22-Jn0053121	NCP	%	101			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B22-Jn0053121	NCP	%	92			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B22-Jn0053121	NCP	%	101			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B22-Jn0053121	NCP	%	83			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B22-Jn0053121	NCP	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B22-Jn0053121	NCP	%	81			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B22-Jn0053121	NCP	%	78			50-150	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Jn0050715	CP	%	19	17	11	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCA)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTTrDA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTTeDA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-Jn0050715	CP	ug/kg	< 10	< 10	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-Jn0050715	CP	ug/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFSA)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S22-Jn0050715	CP	ug/kg	< 10	< 10	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-Jn0050715	CP	ug/kg	< 5	< 5	<1	30%	Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Temperature of Chilled samples on receipt	3.4°C
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC

Authorised by:

Emma Beesley	Analytical Services Manager
Jonathon Angell	Senior Analyst-PFAS
Jonathon Angell	Senior Analyst-Sample Properties



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

SMEC Australia Pty Ltd
 Level 6, 76 Berry Street
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
 NATA is a signatory to the ILAC Mutual Recognition
 Arrangement for the mutual recognition of the
 equivalence of testing, medical testing, calibration,
 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: **STEVEN DRYSDALE**

Report **899779-W**
 Project name **BELROSE MORGAN ROAD PFAS INVESTIGATION**
 Project ID **30018048**
 Received Date **Jun 22, 2022**

Client Sample ID			SC01 Water S22-Jn0050721 Jun 22, 2022	DUP01 Water S22-Jn0050722 Jun 22, 2022	FIELD REAGENT BLANK Water S22-Jn0050723 Jun 22, 2022
Sample Matrix					
Eurofins Sample No.					
Date Sampled					
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	84	82	126
13C5-PFPeA (surr.)	1	%	97	96	152
13C5-PFHxA (surr.)	1	%	111	103	138
13C4-PFHpA (surr.)	1	%	143	136	130
13C8-PFOA (surr.)	1	%	152	146	124
13C5-PFNA (surr.)	1	%	154	144	117
13C6-PFDA (surr.)	1	%	131	131	115
13C2-PFUnDA (surr.)	1	%	143	138	132
13C2-PFDoDA (surr.)	1	%	95	100	105
13C2-PFTeDA (surr.)	1	%	73	72	80
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	117	123	84
D3-N-MeFOSA (surr.)	1	%	70	63	68

Client Sample ID			SC01 Water	DUP01 Water	FIELD REAGENT BLANK Water
Sample Matrix			S22-Jn0050721	S22-Jn0050722	S22-Jn0050723
Eurofins Sample No.			Jun 22, 2022	Jun 22, 2022	Jun 22, 2022
Date Sampled					
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonamido substances					
D5-N-EtFOSA (surr.)	1	%	72	72	70
D7-N-MeFOSE (surr.)	1	%	118	127	120
D9-N-EtFOSE (surr.)	1	%	61	56	56
D5-N-EtFOSAA (surr.)	1	%	81	84	79
D3-N-MeFOSAA (surr.)	1	%	88	89	86
Perfluoroalkyl sulfonic acids (PFASs)					
Perfluorobutanesulfonic acid (PFBS) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	124	115	112
18O2-PFHxS (surr.)	1	%	129	114	105
13C8-PFOS (surr.)	1	%	126	118	107
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	50	47	62
13C2-6:2 FTSA (surr.)	1	%	99	86	45
13C2-8:2 FTSA (surr.)	1	%	85	94	79
13C2-10:2 FTSA (surr.)	1	%	133	137	118
PFASs Summations					
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Jun 24, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Jun 24, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFASs)	Brisbane	Jun 24, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Jun 24, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

Company Name:	SMEC Australia Pty Ltd (SYD)	Order No.:		Received:	Jun 22, 2022 6:08 PM
Address:	Level 6, 76 Berry Street North Sydney NSW 2060	Report #:	899779	Due:	Jun 27, 2022
Project Name:	BELROSE MORGAN ROAD PFAS INVESTIGATION	Phone:	02 9925 5555	Priority:	3 Day
Project ID:	30018048	Fax:	02 9925 5566	Contact Name:	STEVEN DRYSDALE

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254									
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		
Brisbane Laboratory - NATA # 1261 Site # 20794								X	X
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	TP01/0.5-0.7M	Jun 22, 2022		Soil	S22-Jn0050713			X	X
2	TP01/1.8-1.9M	Jun 22, 2022		Soil	S22-Jn0050714			X	X
3	TP02/0-0.1M	Jun 22, 2022		Soil	S22-Jn0050715			X	X
4	TP03/0.5-0.7M	Jun 22, 2022		Soil	S22-Jn0050716			X	X
5	TP03/0.9-1M	Jun 22, 2022		Soil	S22-Jn0050717			X	X
6	TP04/0-0.1M	Jun 22, 2022		Soil	S22-			X	X

Company Name: SMEC Australia Pty Ltd (SYD)
Address: Level 6, 76 Berry Street
North Sydney
NSW 2060

Order No.:
Report #: 899779
Phone: 02 9925 5555
Fax: 02 9925 5566

Received: Jun 22, 2022 6:08 PM
Due: Jun 27, 2022
Priority: 3 Day
Contact Name: STEVEN DRYSDALE

Project Name: BELROSE MORGAN ROAD PFAS INVESTIGATION
Project ID: 30018048

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254									
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		
Brisbane Laboratory - NATA # 1261 Site # 20794								X	X
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
					Jn0050718				
7	TP04/1-1.2M	Jun 22, 2022		Soil	S22- Jn0050719			X	X
8	TP05/0.5-0.6M	Jun 22, 2022		Soil	S22- Jn0050720			X	X
9	SC01	Jun 22, 2022		Water	S22- Jn0050721				X
10	DUP01	Jun 22, 2022		Water	S22- Jn0050722				X
11	FIELD REAGENT BLANK	Jun 22, 2022		Water	S22- Jn0050723				X
12	TP01/0-0.1M	Jun 22, 2022		Soil	S22-		X		

Company Name:	SMEC Australia Pty Ltd (SYD)	Order No.:		Received:	Jun 22, 2022 6:08 PM
Address:	Level 6, 76 Berry Street North Sydney NSW 2060	Report #:	899779	Due:	Jun 27, 2022
Project Name:	BELROSE MORGAN ROAD PFAS INVESTIGATION	Phone:	02 9925 5555	Priority:	3 Day
Project ID:	30018048	Fax:	02 9925 5566	Contact Name:	STEVEN DRYSDALE

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254									
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		
Brisbane Laboratory - NATA # 1261 Site # 20794								X	X
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
12	TP01/0-0.1M	Jun 22, 2022		Soil	S22-Jn0050724				
13	TP01/0.9-1M	Jun 22, 2022		Soil	S22-Jn0050725		X		
14	TP03/0-0.1M	Jun 22, 2022		Soil	S22-Jn0050726		X		
15	TP04/0.5-0.6M	Jun 22, 2022		Soil	S22-Jn0050727		X		
16	TP05/0-0.1M	Jun 22, 2022		Soil	S22-Jn0050728		X		
17	TP05/1.2-1.3M	Jun 22, 2022		Soil	S22-Jn0050729		X		
18	BLANK	Jun 22, 2022		Water	S22-	X			

Company Name:	SMEC Australia Pty Ltd (SYD)	Order No.:		Received:	Jun 22, 2022 6:08 PM
Address:	Level 6, 76 Berry Street North Sydney NSW 2060	Report #:	899779	Due:	Jun 27, 2022
Project Name:	BELROSE MORGAN ROAD PFAS INVESTIGATION	Phone:	02 9925 5555	Priority:	3 Day
Project ID:	30018048	Fax:	02 9925 5566	Contact Name:	STEVEN DRYSDALE

Eurofins Analytical Services Manager : Emma Beesley

Sample Detail	CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254				
Sydney Laboratory - NATA # 1261 Site # 18217	X	X		
Brisbane Laboratory - NATA # 1261 Site # 20794			X	X
Mayfield Laboratory - NATA # 1261 Site # 25079				
Perth Laboratory - NATA # 2377 Site # 2370				
External Laboratory				
				Jn0050730
Test Counts	1	6	8	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05		0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01		0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01		0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01		0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01		0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01		0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01		0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01		0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01		0.01	Pass	
Perfluorotridecanoic acid (PFTTrDA)	ug/L	< 0.01		0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01		0.01	Pass	
Method Blank						
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05		0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05		0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05		0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05		0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05		0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05		0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05		0.05	Pass	
Method Blank						
Perfluoroalkyl sulfonic acids (PFASs)						
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01		0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01		0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01		0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01		0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01		0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01		0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01		0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01		0.01	Pass	
Method Blank						
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01		0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05		0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01		0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01		0.01	Pass	
LCS - % Recovery						
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)	%	109		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	110		50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	129		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	86		50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	92		50-150	Pass	
Perfluorononanoic acid (PFNA)	%	107		50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	116		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	104		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	122		50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	%	130		50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	118		50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
LCS - % Recovery								
Perfluoroalkyl sulfonamido substances								
Perfluorooctane sulfonamide (FOSA)	%	77			50-150	Pass		
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	89			50-150	Pass		
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	88			50-150	Pass		
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	97			50-150	Pass		
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	101			50-150	Pass		
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	123			50-150	Pass		
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	118			50-150	Pass		
LCS - % Recovery								
Perfluoroalkyl sulfonic acids (PFSA's)								
Perfluorobutanesulfonic acid (PFBS)	%	108			50-150	Pass		
Perfluorononanesulfonic acid (PFNS)	%	115			50-150	Pass		
Perfluoropropanesulfonic acid (PFPrS)	%	135			50-150	Pass		
Perfluoropentanesulfonic acid (PFPeS)	%	81			50-150	Pass		
Perfluorohexanesulfonic acid (PFHxS)	%	107			50-150	Pass		
Perfluoroheptanesulfonic acid (PFHpS)	%	105			50-150	Pass		
Perfluorooctanesulfonic acid (PFOS)	%	98			50-150	Pass		
Perfluorodecanesulfonic acid (PFDS)	%	97			50-150	Pass		
LCS - % Recovery								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)								
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	103			50-150	Pass		
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	93			50-150	Pass		
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	112			50-150	Pass		
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	107			50-150	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Perfluoroalkyl carboxylic acids (PFCAs)								
Perfluorobutanoic acid (PFBA)	S22-Jn0052927	NCP	%	111		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S22-Jn0052927	NCP	%	116		50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S22-Jn0052927	NCP	%	131		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-Jn0052927	NCP	%	93		50-150	Pass	
Perfluorooctanoic acid (PFOA)	S22-Jn0052927	NCP	%	99		50-150	Pass	
Perfluorononanoic acid (PFNA)	S22-Jn0052927	NCP	%	107		50-150	Pass	
Perfluorodecanoic acid (PFDA)	S22-Jn0052927	NCP	%	118		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-Jn0052927	NCP	%	105		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-Jn0052927	NCP	%	114		50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S22-Jn0052927	NCP	%	114		50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S22-Jn0052927	NCP	%	112		50-150	Pass	
Spike - % Recovery								
Perfluoroalkyl sulfonamido substances								
Perfluorooctane sulfonamide (FOSA)	S22-Jn0052927	NCP	%	85		50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-Jn0052927	NCP	%	93		50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-Jn0052927	NCP	%	77		50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S22-Jn0052927	NCP	%	80		50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S22-Jn0052927	NCP	%	98		50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-Jn0052927	NCP	%	123			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-Jn0052927	NCP	%	118			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSA's)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S22-Jn0052927	NCP	%	103			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S22-Jn0052927	NCP	%	106			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S22-Jn0052927	NCP	%	130			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S22-Jn0052927	NCP	%	81			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-Jn0052927	NCP	%	110			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S22-Jn0052927	NCP	%	107			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-Jn0052927	NCP	%	104			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S22-Jn0052927	NCP	%	90			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-Jn0052927	NCP	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S22-Jn0052927	NCP	%	112			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-Jn0052927	NCP	%	111			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-Jn0052927	NCP	%	99			50-150	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S22-Jn0050721	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S22-Jn0050721	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-Jn0050721	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-Jn0050721	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S22-Jn0050721	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S22-Jn0050721	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-Jn0050721	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-Jn0050721	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFSA)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S22-Jn0050721	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-Jn0050721	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Temperature of Chilled samples on receipt	3.4°C
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Emma Beesley	Analytical Services Manager
Jonathon Angell	Senior Analyst-PFAS



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



Member of the Surbana Jurong Group

SMEC

PO Box 1052, North Sydney, NSW 2059

Phone: +61 2 9925 5555

Email: Sydney.Reception@smec.com

We're redefining exceptional

Through our specialist expertise, we're challenging boundaries to deliver advanced infrastructure solutions.

www.smec.com