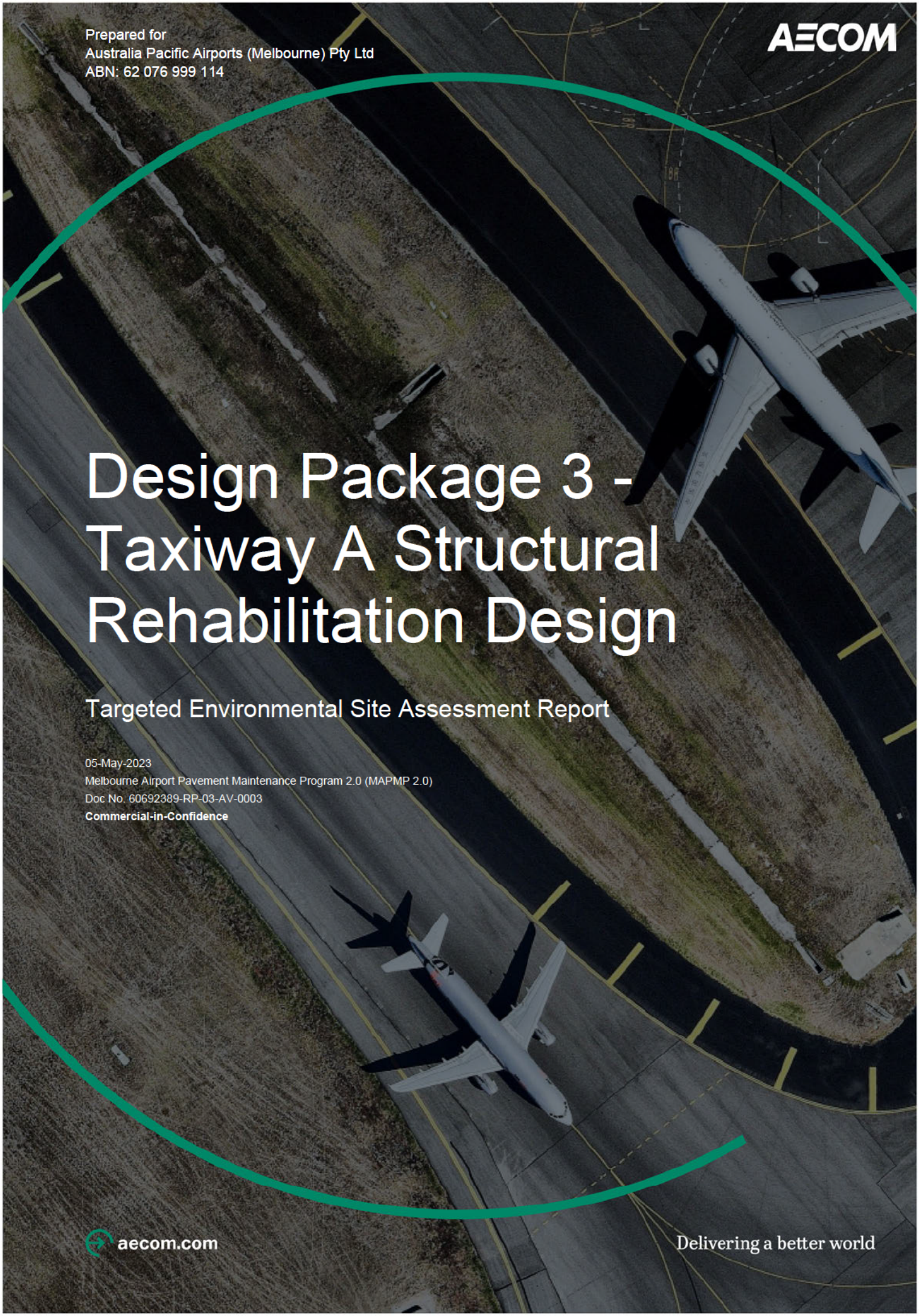
Prepared for
Australia Pacific Airports (Melbourne) Pty Ltd
ABN: 62 076 999 114

AECOM



Design Package 3 - Taxiway A Structural Rehabilitation Design

Targeted Environmental Site Assessment Report

05-May-2023
Melbourne Airport Pavement Maintenance Program 2.0 (MAPMP 2.0)
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Client: Australia Pacific Airports (Melbourne) Pty Ltd

ABN: 62 076 999 114

Prepared by

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Quality Information

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Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	28-Mar-2023	Draft for Client Review	[redacted] Technical Director	
B	05-May-2023	Final	[redacted] Principal Aviation Engineer	[redacted]

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1.0 Introduction

Australia Pacific Airports (Melbourne) (APAM) Pty Ltd has engaged AECOM Australia Pty Ltd (AECOM) under the Melbourne Airport Pavement Maintenance Program 2.0 (CP22062) to provide Airfield Engineering and Design Services.

The contracted services include the provision of Design Phase Services (DPS) to develop and implement three (3) separate packages of airfield pavement maintenance works, as well as undertaking the annual aircraft pavement condition inspection to inform the Aerodrome Technical Inspection (ATI). Each of the four Design Packages are further defined below:

Design Package 1 – Minor Asphalt Works

- This package includes provision for undertaking routine flexible pavement maintenance works including asphalt patch repairs, shoulder pavement reconstruction, AGL reinstatement, line marking, surface treatments and other ancillary miscellaneous works to asphalt pavement areas identified as part of the 2021 Pavement Maintenance Plan (PMP).

Design Package 2 – Expedient Concrete Works

- This package includes provision for replacement of existing concrete slabs identified as part of the 2021 PMP. The slabs will be replaced with a proprietary expedient concrete.

Design Package 3 – Taxiway A Structural Rehabilitation Design

- This package includes 2 key scope elements:
  - Stage 1 is considered enabling works to Stage 2. Stage 1 includes works along Taxiway S (between Taxiways J and K) to enable Code F (wide body) aircraft operations. Stage 1 must be completed to enable Stage 2 to proceed.
  - Stage 2 includes the reconstruction of Taxiway A (between Taxiways J and K) to allow current and future Code F operations.

Design Package 4 – ATI

- This package requires AECOM to undertake an annual aircraft pavement condition inspection to inform the Aerodrome Technical Inspection (ATI) that meets the requirements of the Manual of Standards (MOS) - Part 139 (2020) and Civil Aviation Safety Regulations (CASR).

1.1 Scope of Works

This Environmental Site Assessment Report relates to Design Package 3 – Taxiway A Structural Rehabilitation Design.

AECOM has prepared a limited (and targeted) preliminary soil sampling program to assist in the characterisation of soil and pavement materials in the areas where the new and reinstated pavement works are proposed. In addition to this soil assessment, the installation of one groundwater monitoring bore was also undertaken (in accordance with the brief) to understand if there is interaction with perched water and the pavements at shallow depths (<2mbgs). The primary objective of the monitoring well is to monitor the perched or groundwater level throughout a full seasonal year to understand cyclic change of water levels (should water exist) at the proposed location.

This report details the findings from the soil investigation, which were conducted in January 2023. Management of excess soils associated with the project is unknown at this stage however a preliminary soil waste classification has also been provided for planning purposes.

The scope of work for this investigation consisted of the following general tasks:

- Review Nearmap © imagery to establish historical use of the specific locations and if filling had occurred in this area over time.
- Review Melbourne Airport historical documents targeting the potential for historical activities in the vicinity of the proposed pavement and taxiway upgrades. -

- Prepare a sampling plan of environmental locations showing approximate locations and methodology in GIS format. A revised sampling plan was agreed with Melbourne Airport during the site works due to operational constraints which resulted in limited access to complete the original scope ([redacted]).
- Completion of an external project safety induction and kick off meetings as well as the safety requirements for the site and brief on the sampling plans and scope of works.
- Preparation of a safe work method statement for soil and groundwater tasks including hazard mitigation methods.
- Project coordination of resources including laboratory results, timing, progress, and general queries.
- Liaison with APAM and relevant laboratories (ALS Environmental Pty Ltd (ALS) and Eurofins-MGT (Eurofins)).
- Collection of soil samples from 17 soil locations positioned across the following taxiway infrastructure:
  - Taxiway A (between Taxiway J and Taxiway K)
  - Taxiway S (between Taxiway J and Taxiway K)
  - Taxiway A Shoulder (between Taxiway E and Runway 09-27)
  - Taxiway K Flanks
- The samples were submitted to the laboratory for the following analysis:
  - Analysis of 17 primary soil samples for Suite 1 – EPA Publication 1828.2 Screen (excluding EDTA)
  - Analysis of 17 primary soil samples for Suite 2 – Metals (15), TPH/TRH, BTEX and PAHs, and
  - Suite 3 – PFAS compounds extended Suite.
- Installation of one shallow groundwater monitoring well to 3 metres below ground level (mbgl).
- Completion of one groundwater gauging event of the single on-site monitoring well.
- Preparation of a targeted assessment report (this report), including the methodology of the soil and groundwater testing program for each area, tabulated results compared to Tier 1 screening criteria. Separate results tables have been prepared to present the PFAS compounds tabulated against criteria set in the PFAS NEMP Version 2 May 2020 and EPA waste disposal categories - characteristics and thresholds (Publication 1828.2). A summary of the results as well as the conclusions and recommendations based on the data collected has also been included.

2.0 Site Setting

Site identification and land use details are summarised below in **Table 1**.

Table 1 Site Identification Information

Item	Details
Site location	Melbourne Airport (23 kilometres northwest of the city centre, adjacent to the suburb of Tullamarine). The investigation area is outlined in **Figure 2**, **Appendix A** and is targeting discrete locations across Taxiway A, Taxiway S, and Taxiway K
Current land use	The Melbourne Airport site has been operating as an airport since the 1960s.
Adjacent site uses	• North: Woodlands Historic Park followed by low density residential land use. • South: Commercial/industrial land use followed by high density residential land use. • East: High density residential land use; and • West: Low- and high-density residential land use.
Current Infrastructure	Melbourne Airport currently has four terminals and two runways.

2.1 Background Information and Historical Summary

The Melbourne Airport site has been operating as an airport since the 1960s.The historical operations at the Melbourne Airport generally include:

- Passenger and cargo aviation which includes fuel storage and handling.
- Fire training and the storage and use of firefighting foam.
- Tenant-operated maintenance facilities for vehicles and aircraft.
- Water run-off from vehicle-related activities including aircraft maintenance and car park facilities.
- General airport operation, construction, maintenance, and landscaping, including the use and disposal of pesticides and herbicides, solvents and paints, batteries, and asbestos-containing materials within existing buildings, fuels and cleaning chemicals.

It is noted that Taxiway A and S are used for transiting planes from the main runway to the boarding terminals, and not the storage of fuels or fire training. No evidence of spills or foam use or storage of chemicals was observed from the nearmap imagery.

2.2 Taxiway – NearMap Review

Taxiway A comprises the original 1968 concrete slabs. The aged and fatigued slabs, particularly over the middle 3rd of the Taxiway length, are in a very poor condition AECOM 2022 (Concept Design Report). The slabs are showing some cracking and breaks from NearMap imagery reviewed between 2009-2022. Several of the cracks have been repaired with asphalt and in some locations the existing repair is in poor condition and have some vegetation growing within them.

Taxiway S comprises the original 1968 concrete slabs which were noted to be in 'poor to fair condition'. The main forms of distress observed are weathering, longitudinal cracking, shrinkage cracking, and halving cracks within the wheel paths, and corner and edge spalls AECOM 2022 (Concept Design Report). NearMap imagery confirmed some cracked concrete but overall, the general outline of both Taxiway A and Taxiway S had not changed from 2009-2022 and no evidence of spills, staining or fire training was observed.

3.0 Assessment Methodology

3.1 Soil Investigation and Groundwater Monitoring Well Installation Methodology

Details of the soil investigation and monitoring well installation methodology are summarised in **Table 2** below. The location of the soil bores, test pits and groundwater monitoring well (BH02) are presented on **Figure 2** (**Appendix A**).

Table 2 Soil Investigation Methodology

Activity/Item	Details
Date of Field Activities	23, 24, 25, 29, 30, 31 January 2023
Service Location	Service location was undertaken prior to drilling works being undertaken by Construction Sciences.
Drilling Method	Four (4) pavement dipping locations (PD05, PD08, PD11, PD12) were drilled to depths ranging between 1-2m using a trailer mounted rig. Six (6) test pit locations (TP04-TP09) were excavated to depths of 2m Seven (7) borehole locations (BH2-BH08) were drilled using push tube drilling methods In conjunction with the geotechnical assessment at the site, one soil bore (BH2) was drilled and completed as a groundwater monitoring well. BH2 was advanced using solid auger to 3.2 mbgl. Refer to **Figure 2, Appendix A** outlining the individual test locations on each of the Taxiway network
Soil Logging	The soil bore logs are presented in **Appendix C**. A summary of materials encountered is provided in **Section 6.0**.
Soil Sampling and Analysis	Soil samples were collected for analysis from the solid stem auger and from the excavator bucket. All soil samples were screened for volatile organic compounds (VOC) using a photo-ionisation detector (PID). Soil samples were typically collected near surface, at 0.2 mbgl, 0.5 mbgl, 1.0 mbgl and 2.0mbgl. Two soil samples collected were analysed per location. One soil sample for heavy metals (8), PAHs, BTEX, TRH and PFAS and one sample for an EPA Publication 1828.2 Screen (excluding EDTA). The PID calibration certificate is provided in **Appendix C** and laboratory certificates are provided in **Appendix D.**
Quality Control Sampling	One field duplicate and field triplicate sample was collected to comply with the quality control rate of 1 in every 20 primary samples. Field and rinsate blanks were collected for each day of sampling. Samples were analysed for TRH, BTEX, PFAS short suite and metals. The primary samples and the quality control and quality assurance samples, excluding the field triplicate, were analysed by ALS. The field triplicate was analysed by Eurofins. Laboratory certificates are provided in **Appendix D**.

Activity/Item	Details
Groundwater Monitoring Well Installation	The groundwater monitoring well was installed using nominal 50 mm diameter Class 18 uPVC casing with machine-slotted (0.5 mm slot) uPVC screen installed. A sand filter pack (8/16" washed quartz sand) was installed in the bore annulus across and above the top of the screen. Above this, a bentonite seal was installed and hydrated. The annulus of bore was then grouted to surface level and a flush gatic installed. Constructions details are presented in **Appendix C.** Monitoring well BH2 was not required to be surveyed.
Decontamination Procedures	Dedicated and disposable nitrile gloves were worn during collection of each sample. All samples were placed in clean, laboratory-supplied, acid washed, solvent rinsed glass jars. The drilling equipment was decontaminated prior to the collection of each sample.
Sample Preservation	All samples were collected in laboratory supplied sample containers and placed in chilled eskies for transportation under standard AECOM Chain of Custody (CoC) procedures to the laboratory for analysis. Copies of the CoCs are provided in **Appendix D**.
Equipment Calibration	Supplier and field calibration certificates are provided in **Appendix C**.

3.2 Groundwater Sampling Methodology

Details of the groundwater sampling methodology are summarised in **Table 3** below. The location of the groundwater monitoring well is presented on **Figure 2** (**Appendix A**).

Table 3 Groundwater Sampling Methodology

Activity/Item	Details
Date of Field Activities	23 January 2023 – well installed and gauged 3 February 2023 – water level gauging event.
Groundwater Sampling Method	The groundwater was proposed to be collected by Hydrasleeve™ sampling techniques at BH2. However, the well was found to be dry, therefore ex-situ measurements of groundwater pH, dissolved oxygen (DO), reduction potential (redox), electrical conductivity (EC) and temperature were not collected.

3.3 Quality Assurance / Quality Control Methodology

Quality assurance and control measures (QA/QC) were incorporated into the sampling and analysis work so that the data quality objectives could be achieved and to demonstrate accuracy, precision, comparability, representativeness, and completeness with regard to the data generated.

3.3.1 Data Quality Indicators (DQIs)

The data quality objectives (DQIs) adopted are based upon data validation guidance documents published by Standards Australia (SA) and National Environment Protection Council (NEPC). These include *Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil* (AS 4482.1-2005 – withdrawn for revision), Schedule B2 *Site Characterisation* (NEPM, 2013b) and Schedule B3 *Laboratory Analysis of Potentially Contaminated Soils* (NEPC 1999, amended 2013).

The process involves the checking of analytical procedure compliance and an assessment of the accuracy and precision of analytical data from a range of quality control measurements, generated from both the field sampling and analytical programs.

Specific elements that have been checked and assessed for this project include:

- Preservation and storage of samples upon collection and during transport to the laboratory.
- Sample holding times.
- Use of appropriate analytical and field sampling procedures.
- Required laboratory limit of reporting (LOR).
- Frequency of conducting quality control measurements.
- Rinsate, field and trip blank results.
- Laboratory blank results.
- Field duplicate and triplicate results.
- Laboratory duplicate results.
- Matrix spike (MS) results.
- Surrogates spike results.
- Review of chromatograms.
- The occurrence of apparently unusual or anomalous results, e.g., laboratory results that appear to be inconsistent with field observations or measurements.

The data validation summary is provided in **Appendix E**.

4.0 Adopted Investigation Levels

4.1 Soil Investigation Levels

Investigation levels have been adopted in accordance with the Airports (*Environment Protection*) Regulations 1997, the PFAS National Environmental Management Plan, Version 2, (PFAS NEMP), the National Environment Protection (*Assessment of Site Contamination*) Measure 1999 (as amended in 2013) and the Melbourne Airport PFAS Management Framework (March 2022).

4.1.1 Human Health

The adopted assessment criteria for the protection of human health are Commercial/Industrial Health Investigation Levels (HIL-D) and Health Screening Levels (HSLs) as described in Schedule B1 (Guideline on Investigation Levels for Soil and Groundwater) of the Amended National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013), henceforth referred to as the Amended ASC NEPM.

The Amended ASC NEPM provides risk-based guidelines for selected organic and inorganic chemicals in soils. Different levels are provided for a variety of exposure settings including residential, open space/ parks/ recreational and commercial/ industrial land uses.

In addition, the Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) HSLs source document (CRC CARE, 2011) is referenced for HSLs applicable for the assessment of vapour intrusion for intrusive maintenance workers and direct contact. As the direct contact HSLs are significantly higher than most other soil screening levels, this pathway is unlikely to be a primary driver and, therefore the direct contact HSLs have not been adopted for this assessment.

The VI soil HSLs vary according to the site-specific soil type/s and depth/s to impacts. The soil type is based on observations detailed as part of this investigation. As the shallow soil encountered within several bores comprised sand, clayey sand / sandy clay, AECOM has adopted Sand HSLs.

In addition to HSLs, the Amended ASC NEPM provides Management Limits (MLs) for petroleum hydrocarbon compounds in soils. These limits are to assess for potential formation of LNAPL, fire and explosion risk, and damage to buried infrastructure.

The adopted assessment criteria for the protection of human health from PFAS chemicals has been derived from the Heads of the EPA (HEPA) PFAS National Environmental Management Plan version 2.0 (January 2020), herein referred to as the HEPA NEMP 2.0.

The HEPA NEMP 2.0 provides risk-based guidelines for PFAS compounds, principally PFOA and the Sum of PFOS and PFHxS, for human health. Different investigation levels are provided depending on the sites current and future land use, consistent with the Amended ASC NEPM. For the purposes of this assessment residential land use criteria have been adopted which includes commercial and industrial soils.

4.1.2 Land Dependant Ecosystems and Species (Highly Modified)

The Amended ASC NEPM provides ecological investigation levels (EILs) (derived for arsenic, chromium (III), copper, lead, naphthalene, nickel, and zinc) and ecological screening levels (ESLs) (derived for TRH fractions, BTEX and benzo(a)pyrene) for a range of different land uses. The EILs and ESLs are generally applicable to the top 2 m of soil only. AECOM adopted a Cation Exchange Capacity of 5, a pH of 4.3 and a clay content of 5% to calculate EILs based on data from the Victorian Background Soil Database (https://soilexplorer.org.au/). EILs were calculated on a site-specific basis using the 'EIL Calculation Spreadsheet' presented as part of the ASC NEPM Toolbox dated December 2010 (http://nepc.gov.au/nepms/assessment-site-contamination/toolbox).

4.1.3 Aesthetics

The Amended ASC NEPM provides guidance for the assessment process for aesthetic issues, including the presence of low-concern or non-hazardous inert foreign material (refuse) in soil or fill resulting from human activity. It should be noted that aesthetic issues include visual and olfactory signs of foreign material. Sites that have been assessed as being acceptable from a human health and environmental perspective may still contain such foreign material, such as fragments of concrete, metal, bricks, pottery, glass, or low odour residue (for example, weak petroleum hydrocarbon odours). Given

the ongoing commercial/industrial use of the site, aesthetics has not been considered as part of this assessment.

4.2 Waste Classification

Disposal of waste soils in Victoria are regulated by the EPA who detail relevant criteria in 'Waste disposal categories – characteristics and thresholds' (EPA Publication 1828.2 dated March 2021).

The disposal category of a soil is assessed based upon the total concentration of potential contaminants and where soils exceed Fill Material levels, the leachable concentration. The actual classification of a soil body will also depend on other factors such as source, quantity of soil and presence of other components (aesthetically unacceptable materials, asbestos containing materials, etc).

The soil results have been compared to the criteria presented in Publication 1828.2, however it is noted that these results are preliminary only and further data will be required to accurately classify soil for offsite disposal. It is also noted that these criteria do not apply to the on-site re-use of spoil (as Melbourne Airport is Commonwealth land).

4.3 Airports (Environment Protection) Regulations 1997

The purpose of the Airports (Environment Protection) Regulations (Airport, 1997) is to establish a Commonwealth system of regulation for pollution and excessive noise and to promote better environmental outcomes on leased Commonwealth airports.

The objectives of these Regulations are:

a. To establish, in conjunction with national environment protection measures made under section 14 of the *National Environment Protection Council Act 1994*, a Commonwealth system of regulations of, and accountability for, activities at airports that generate, or have potential to generate:
   i. Pollution; or
   ii. Excessive noise; and

b. To promote improving environmental management practices for activities carried out at airport sites.

4.4 Melbourne Airport PFAS Management Framework

The PFAS Management Framework has been prepared to ensure that consistent environmental management practices are understood and implemented to manage the potential environmental risks associated with PFAS impacted material during construction and maintenance activities at Melbourne Airport. It is to outline the minimum environmental management requirements required during construction and maintenance activities at Melbourne Airport and to demonstrate how Melbourne Airport complies with the requirements of the PFAS NEMP. Management levels and requirements are listed in **Table 4** below:

Table 4 Reuse and Gate 11 Facility Management levels and Requirements

Management Level	PFOS + PFHxS Concentration		Reuse Management Requirement	Storage at the Gate 11 Facility
	Total (mg/kg)**	Leachable (ASLP pH neutral) µg/L**		
Level 1	≤0.01	≤0.4	Reuse within same concentration areas with surface stabilisation improvements (e.g. hydromulch) If material is topsoil and has ASLP concentrations <0.07 µg/L, can be reused within same concentration areas without surface stabilisation	Stabilisation to minimise dust generation and surface water runoff using hydromulch or similar stabilisation product***.

Management Level	PFOS + PFHxS Concentration		Reuse Management Requirement	Storage at the Gate 11 Facility
	Total (mg/kg)**	Leachable (ASLP pH neutral) µg/L**		
Level 2	>0.01– 0.014	>0.4– 0.7	Reuse within same concentration areas with surface stabilisation i.e. >50 mm clean fill / topsoil / Level 1 materials	Stabilisation to minimise dust generation and surface water runoff using hydromulch or similar stabilisation product***.
Level 3	>0.014– 0.14	>0.7– 7	Reuse subject to specific risk assessment in accordance with the PFAS NEMP, followed by APAM approval	Temporary and final stockpiles covered with impermeable barrier to prevent infiltration to, and leaching from, stockpile (e.g. LDPE with maintenance; or impermeable geocomposite; or similar material)
Level 4	>0.14– 50*	>7– 2,500	Reuse subject to specific risk assessment in accordance with the PFAS NEMP, followed by APAM approval	Storage subject to specific risk assessment to confirm required controls followed by APAM approval
Level 5	>50 mg/kg*	>2,500 µg/L	Cannot be reused on-site. May require treatment prior to reuse, storage or disposal. May be able to be retained on-site under specific management circumstances subject to risk assessment, engineering controls and APAM approval.	Storage not permitted without further risk assessment and APAM approval. May require treatment prior to reuse, storage or disposal.

* The maximum total concentration of PFOS+PFHxS considered for reuse is 50 mg/kg. Any material that exceeds this must be segregated and an appropriate remediation strategy developed.

** The management requirements in this table for Management Levels 1 to 4 are driven by leachable, rather than total concentrations. The total concentrations listed here can be applied if leachable analysis has not been undertaken, as they have been back calculated and reflect the total acceptable soil concentration if 100% is conservatively assumed. However, slightly higher total concentrations may be acceptable provided that leachable concentrations have been measured and meet the relevant threshold, subject to APAM discretion and approval.

*** Where proposed management requirement is not feasible/ practicable, a higher level of management control must be adopted (e.g. LDPE).

Notes:

1) Material not impacted by detectable PFAS concentrations can be reused on-site in line with the Airports (Environment Protection) Regulations 1997 or disposed of off-site in line with the Environment Protection Regulations 2021, without restrictions outlined in this framework.
2) The maximum total concentration considered for storage within the facility is 0.14 mg/kg and leachable concentration is 7µg/L. Any material that exceeds these thresholds will require further assessment in consultation with the APAM Environment and Sustainability Team to identify potentially unacceptable risks to human health associated with retaining the material on-site.
3) The maximum total concentration considered for reuse is 50 mg/kg. Any material that exceeds this concentration must be segregated and an appropriate remediation solution identified in consultation with the APAM Environment and Sustainability Team.
4) The use of statistical analysis and 95% upper confidence limits can be adopted for establishing PFAS Management Levels where sufficient data is available (e.g. 10 samples for like soil material).
5) Management levels have been selected from generic values provided in the PFAS NEMP along with values derived through risk-based assessment as outlined in the Technical Background Document (Senversa, 2021).
6) Management levels presented above are based on a commercial/industrial use setting. Where a more sensitive land use is identified within the estate more conservative criteria may apply and will need to be considered as part of the risk assessment process required as outlined in Section 3.4.3.
7) Reuse management levels have not been provided for PFOA, as PFOS + PFHxS have been found to be the primary PFAS contaminant of concern and management driver at Melbourne Airport.

5.0 Groundwater Investigation Levels

To assess the potential impacts to groundwater, the quality of groundwater is considered with respect to the NEPM investigation levels.

The newly installed well was found to be dry on two occasions and therefore investigation levels have not been defined for this assessment.

6.0 Results

6.1 Soil

6.1.1 Site-Specific Geology

Beneath the taxiway pavements the general soil profile consists of:

- The upper geological layer consisted of fill / reworked natural to a depth of approximately 0.2-0.5 mbgl. The fill / reworked natural soil consisted of primarily of sand, sandy clay, and clay.
- The underlying natural soil consisted primarily of clay with some traces of silt and sand observed (0.5-2.0 mbgl).

6.1.2 Soil Observations and VOC Screening

Hydrocarbon impacts (e.g., staining, hydrocarbon odours, elevated PID readings over 100 ppm) were not observed in soils from soil bores, test pits or boreholes. There was also no observations of foreign material, such as fragments of concrete, metal or bricks. Bore logs are provided in **Appendix C**.

6.1.3 Soil Analytical Results

A total of 35 primary samples were collected from different depth intervals (ranging from 0.1 mbgl to 5 mbgl). The soil analytical results screened against the adopted human health and ecological assessment criteria described in **Section 4.0** are presented in **Table T1-T4**, respectively, in **Appendix B**. The results indicate:

- Results for all metals selected were below the Tier 1 human health criteria for commercial/industrial use for all samples.
- The pH of soil samples ranged between 6.1 and 8.5 consistent with the classification of 'non aggressive' (AS2159 2009 Piling – Design and Installation, Table 6.4.2 pH >5.5).
- The soil results were not above the criteria for land dependent ecosystems and species and there were no observations of vegetation stress made during the site visit.
- No asbestos was observed during the collection of the samples.
- Results for Total Petroleum Hydrocarbons, Total Recoverable Hydrocarbons, Monocyclic Aromatic Hydrocarbons, Phenolic Compounds, Polychlorinated Biphenyls, Organochlorine Pesticides (OC) and Cyanides were reported below the laboratory LORs and below Tier 1 human health criteria for commercial/industrial use for all samples collected in Taxiway A, S and Area K and E.
- Two samples reported Perfluorooctane sulfonic acid (PFOS) in TP04_1.0 and QC14_29012023 above the PFAS NEMP 2020 Ecological indirect exposure criteria (0.01mg/kg), these samples were collected in Taxiway S. Samples exceedances for PFOS in sample QC14_29012023 was not detected in the primary sample (BH04_0.5). The variability between primary and QC samples can be explained by the heterogeneity of the soil when sampled. It is also noted that the assessment of risk should be made on primary data only. The purpose of QC data is to assess the reliability of the analytical results.
- Results compared against Airports (*Environment Protection*) Regulations (AEPR 1997) guidelines show exceedances against Areas of Environmental Significance for barium, manganese and nickel in multiple samples. However, these elements are products of basalt weathering and are common with in volcanic derived soils. The results do not exceed background soil concentrations. According to the Victorian Soil Database (V.1.0.0) (https://soilexplorer.org.au/), barium concentrations of the Newer Volcanics range from <2 to 3,100 mg/kg with a mean of 245 mg/kg. The highest result reported was 890 mg/kg (BH8_1.0). Background concentrations for manganese in the Newer Volcanics range from <5 to 871 mg/kg with a mean of 263 mg/kg. The highest result recorded was 625 mg/kg (BH2_0.5). Background nickel concentrations for the Newer Volcanics range from <5 to 170 mg/kg with a mean of 31 mg/kg. The highest recorded results for nickel was 87 mg/kg (PD08_0.5).
- Analytical data compared against the Melbourne Airport PFAS Management Framework show that one result, QC14 (0.011 mg/kg Sum (PFHxS + PFOS)) exceeds the PFAS management Level 1 and sits within Level 2 (>0.01 – 0.014 mg/kg Sum (PFHxS + PFOS)). Two results, BH05_0.5

(0.0324 mg/kg Sum (PFHxS + PFOS)) and TP04_1.0 (0.124 mg/kg Sum (PFHxS + PFOS)) exceed Level 2 PFAS management levels and are categorised as Level 3. It is noted that these are not statistically representative of spoil likely to require management and further testing is likely to be required for proper management.

- The soil analytical results screened against the EPA waste classification criteria **Section 4.0** are presented in **TableT2**, in **Appendix A.** The results reported concentrations of the COPC analysed were below the upper limit of the 'Fill' criteria in all samples analysed. Therefore, considering the results of this assessment, the sampling locations reported a preliminary soil classification of Fill material in Taxiway A, S, and K. Leachate analysis was not undertaken as part of this assessment and would be required to be compliant with requirements in EPA Publication 1827.2, March 2021 (where off-site disposal is proposed).

6.2 Groundwater

Depth to water was gauged on 29 January 2023 during installation. The bore was found to be dry. Depth to water was gauged again on 3 February 2023 and the bore was also found to be dry. No further sampling could be undertaken. Due to the limited information on existing perched water / groundwater levels, it is not possible confirm or exclude a possible interaction between the Taxiways and sub-surface water (groundwater or perched water). Further assessment of the groundwater levels during the typically wetter months of July to early September will allow confirmation of interaction between the new pavement and groundwater (if any).

7.0 Findings and Conclusions

The conclusions of this preliminary soil and waste classification assessment are as follows:

- The Melbourne Airport site has been operating as an airport since the 1960s. The historical operations specific to the taxiways are largely general airport operation and movement of planes in transit from the main runway to the boarding lounges. The preliminary review of NearMap images confirmed the site use as a taxiway has not changed. Taxiway A and S had not changed in width or appeared to have been interfered with since 2009. Therefore, it is unlikely that impact has occurred from activities such as bulk aviation, fuel storage and handling, fire training and the storage and use of firefighting foam.
- No soil staining or visual evidence of contamination was observed or recorded in the soil profile during the intrusive drilling and the soil sampling works.
- There was no asbestos or asbestos-containing material (ACM) noted during the field works.
- Results for metals, Total Petroleum Hydrocarbons, Total Recoverable Hydrocarbons, Monocyclic Aromatic Hydrocarbons, Phenolic Compounds, Polychlorinated Biphenyls, Organochlorine Pesticides (OC) and Cyanides were reported below the laboratory LORs and below Tier 1 human health criteria for commercial/industrial use for all samples in Taxiway A, Taxiway S and Taxiway K. Soil results were also below the land dependant ecosystems and species criteria.
- The pH of soil samples ranged between 6.1 and 8.5 consistent with the classification of ‘non aggressive’ (AS2159 2009 Piling – Design and Installation, Table 6.4.2 pH >5.5).
- Two samples reported Perfluorooctane sulfonic acid (PFOS) in TP04_1.0 and QC14_29012023 above the PFAS NEMP 2020 Ecological indirect exposure criteria (0.01mg/kg).
- One sample reported Sum (PFHxS + PFOS) concentrations withing Level 2 of the Melbourne Airport PFAS Management Framework guidelines. Two samples reported Sum (PFHxS + PFOS) concentrations within Level 3.
- Exceedances for barium, manganese and nickel were reported against Airports (*Environment Protection*) Regulations (AEPR 1997) Areas of Environmental Significance Guidelines. However, sample concentrations do not exceed reported background concentrations reported of the Newer Volcanics Soil Database.
- Depth to water was gauged on 29 January 2023 during bore installation and was found to be dry. Depth to water was gauged again on the 3 February 2023 and the bore was also found to be dry. No further sampling could be undertaken. Due to the limited information on the existing groundwater levels, it is not possible to confirm or exclude a possible interaction between the Taxiways and sub-surface water (groundwater or perched water). Further assessment of water levels during the typically wetter months of July to early September will allow confirmation of interaction between the new pavement and groundwater (if any).
- Considering the results of this assessment, the sampling locations reported a preliminary soil classification of “Fill material”. Leachate analysis was not undertaken as part of this assessment and may be required along with some additional soil testing if off-site disposal is proposed; to be compliant with waste disposal requirements in EPA Publication 1827.2, March 2021.

8.0 Standard Limitations

This conclusion and all information in this Report are provided strictly in accordance with and subject to the following limitations and recommendations:

a. The ESA undertaken to form this conclusion is limited to the scope of work agreed between AECOM and Melbourne Airport as outlined in **Section 1.2** ("Scope of Work") of this Report.

b. This Report has been prepared for the sole benefit of Australia Pacific Airports Melbourne Pty Ltd .

c. Except as required by law, no third party may use or rely on, this Report unless otherwise agreed by AECOM in writing.

d. The ESA carried out for the purposes of the Report has been undertaken, and the Report has been prepared, in accordance with normal prudent practice and by reference to applicable environmental regulatory authority and industry standards and guidelines in existence at the date of this Report.

e. This Report should be read in full, and no excerpts are to be taken as representative of the findings. No responsibility is accepted by AECOM for use of any part of this Report in any other context.

a. This Report is based on the available information reviewed during the time of preparation as outlined in **Section 1.2**. AECOM accepts no responsibility for any changes in site conditions or in the information reviewed that have occurred after this period.

f. The investigations carried out for the purposes of the Report have been undertaken, and the Report has been prepared, in accordance with normal prudent practice and by reference to applicable environmental regulatory authority and industry standards, guidelines and assessment criteria in existence at the date of this Report.

g. Where this Report indicates that information has been provided to AECOM by third parties, AECOM has made no independent verification of this information except as expressly stated in the Report. AECOM assumes no liability for any inaccuracies in or omissions to that information.

h. Given the limited Scope of Works, AECOM has only assessed the potential for material liability issues resulting from past and current known uses of the site associated with land contamination.

b. AECOM has tested only for those chemicals specifically referred to in this Report. AECOM makes no statement or representation as to the existence (or otherwise) of any other chemicals.

c. Investigations have not been undertaken into off-site conditions, as specified in **Section 1.2**, and AECOM makes no statement as to whether:

    1. any adjoining sites may have been impacted by contamination or other conditions originating from this site or from any other source; and/or

    2. any contamination originating from adjoining sites has or may have an impact on the site itself.

i. Except as otherwise specifically stated in this Report, AECOM makes no warranty or representation as to the presence or otherwise of asbestos and/or asbestos containing materials (“ACM”) on the site. If fill has been imported on to the site at any time, or if any buildings constructed prior to 1970 have been demolished on the site or materials from such buildings disposed of on the site, the site may contain asbestos or ACM.

j. No investigations have been undertaken into any off-site conditions, or whether any adjoining sites may have been impacted by contamination or other conditions originating from this site.

k. Investigations undertaken in respect of this Report are constrained by the site conditions, such as the location of buildings, services, and vegetation. As a result, not all relevant site features and contamination may have been identified in this Report.

l. Subsurface conditions can vary across a particular site and cannot be exhaustively defined by the investigations described in this Report. It is unlikely therefore that the results and estimations expressed in this Report will represent conditions at any location removed from the specific points of sampling.

m. A site which appears to be unaffected by contamination at the time the Report was prepared may later, due to natural phenomena or human intervention, become contaminated.

n. The conclusion set out above is based solely on the information and findings contained in this Report.

o. Except as specifically stated above, AECOM makes no warranty, statement or representation of any kind concerning the suitability of the site for any purpose or the permissibility of any use, development, or re-development of the site.

p. Use, development, or re-development of the site for any purpose may require planning and other approvals and, in some cases, environmental regulatory authority and accredited site auditor approvals. AECOM offers no opinion as to whether the current use has any or all approvals required, is operating in accordance with any approvals, the likelihood of obtaining any approvals, or the conditions and obligations which such approvals may impose, which may include the requirement for additional environmental works.

q. AECOM makes no determination or recommendation regarding a decision to provide or not to provide financing with respect to the site.

r. The ongoing use of the site and/or use of the site for any different purpose may require the owner/user to manage and/or remediate site conditions, such as contamination and other conditions, including but not limited to conditions referred to in this Report.

s. To the extent permitted by law, AECOM expressly disclaims and excludes liability for any loss, damage, cost, or expenses suffered by any third party relating to or resulting from the use of, or reliance on, any information contained in this Report. AECOM does not admit that any action, liability, or claim may exist or be available to any third party.

t. Except as specifically stated in this section, AECOM does not authorise the use of this Report by any third party. It is the responsibility of third parties to independently make inquiries or seek advice in relation to their requirements and proposed use of the site.

9.0 References

AECOM, Design Concept Report, 2022

Airports (Environment Protection) Regulations 1997, *Statutory Rules 1997 No. 13 as amended*, 1997 (Airport, 1997)

Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 2018 (ANZG, 2018)

Australian Standard AS2159-2007 *'Piling-Design and Installation'.*

Melbourne Airport PFAS Management Framework, March 2022

NEPM, 2013a, National Environment Protection (Assessment of Site Contamination) Measure 1999, Amendment Measure 2013 (No 1). Schedule B1 *Guideline on the Investigation Levels for Soil and Groundwater* (NEPM, 2013a).

NEPM, 2013b, National Environment Protection (Assessment of Site Contamination) Measure 1999, Amendment Measure 2013 (No 1). Schedule B2 *Guideline on Site Characterisation* (NEPM, 2013b).

NEPM, 2013c, National Environment Protection (Assessment of Site Contamination) Measure 1999, Amendment Measure 2013 (No 1). Schedule B3 *Laboratory Analysis of Potentially Contaminated Soils* (NEPM, 2013c).

Victorian Government, 2017, *Environment Protection Act, 2017, Authorised Version No. 004, No 51 of 2017*

Victorian Government, 2021, *Environment Protection Regulation, 2021, S.R No. 47/2021*

EPA Waste classification assessment protocol (publication 1827.2) and waste disposal categories - characteristics and thresholds (publication 1828.2)

Appendix A

Figures

PROJECT ID 60631036
CREATED BY TS
LAST MODIFIED RH 28 MAR 2023

AECOM
www.aecom.com

N

DATUM GDA 1994, PROJECTION MGA ZONE 54

0 380 760
metres
1:16,000 (when printed at A3)

LEGEND

Environmental Assessment locations

SITE LAYOUT

MELBOURNE AIRPORT

Environmental Assessment
MELBOURNE AIRPORT PAVEMENT
MAINTENANCE PROGRAM 2.0 (MAPMP 2.0)
Melbourne Airport, Melbourne

Figure

F1

Map Document: (L:\Legacy\Projects\606X\60692389\900_CAD_GIS\920_GIS\02_Maps\2023\03\F1_Site_Locality.mxd)

A3 size

[redacted]

Appendix B

Tables

Appendix C

Borehole Logs

SOIL BOREHOLE BH03

AECOM

Project Name:	**Melbourne Airport**	Client:	**Australian Pacific Airports**
Drilling Contractor:	**Construction Science**	Location:	**Melbourne Airport**
Project No.:	**60692389**		
Logged By:	**AS**	Bore Size:	**mm**
Checked By:	**LM**	Total Depth:	**3.15 m**
Date Started:	**29-1-23**	Coordinates:	**mN** **mE**
Date Finished:	**29-1-23**	Permit No:	
Relative Level:	**mRL**	Drill Type:	
		Drill Model:	
		Drill Fluid:	

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			CLAY with sand, brown, low plasticity, fine grained sand, trace subangular fine grained gravel, rootlets.	D	S		0	QC13 QC14
				1			CLAY, brown, medium plasticity.	W	St		0	BH03_1.0
												N = 5
				2							0	BH03_2.0
				3							0	BH03_3.0
							End of hole at 3.15 mbgl. Terminated due to refusal at base. Backfilled with bentonite.					N = 50

SOIL BOREHOLE BH04

Project Name:	**Melbourne Airport**	Client:	**Australian Pacific Airports**
Drilling Contractor:	**Construction Science**	Location:	**Melbourne Airport**
Project No.:	**60692389**		
Logged By:	**AS**	Bore Size:	**mm**
Checked By:	**LM**	Total Depth:	**0.90 m**
Date Started:	**29-1-23**	Relative Level:	**mRL**
Date Finished:	**29-1-23**	Coordinates:	**mN** **mE**
Permit No:		Drill Type:	
		Drill Model:	
		Drill Fluid:	

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			Sandy CLAY with trace gravel, dark brown, low plasticity, fine to medium grained sand, subangular fine grained gravel of basalt, rootlets.	D	S		0	BH04_0.2
											0	BH04_0.5
												Geotech Sample taken at 0.9m
				1			End of hole at 0.9 mbgl. Terminated due to refusal on bedrock. Backfilled with bentonite.					
				2								
				3								

SOIL BOREHOLE BH05

AECOM

Project Name:	**Melbourne Airport**	Client:	**Australian Pacific Airports**
Drilling Contractor:	**Construction Science**	Location:	**Melbourne Airport**
Project No.:	**60692389**		
Logged By:	**AS**	Bore Size:	**mm**
Checked By:	**LM**	Total Depth:	**1.95 m**
Date Started:	**29-1-23**	Coordinates:	**mN** **mE**
Date Finished:	**29-1-23**	Permit No:	
Relative Level:	**mRL**	Drill Type:	
		Drill Model:	
		Drill Fluid:	

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			CLAY with sand and gravel, brown, low plasticity, fine grained sand, subangular fine grained gravel of basalt.	W	S		0	BH05_0.2
											0	BH05_0.5
				1			CLAY, brown mottled grey, low to medium plasticity.	W	VSt		0	BH05_1.0
											0	N = 13 BH05_1.7
							BASALT, highly weathered, dark brown, vesicular.					
				2			End of hole at 1.95 mbgl. Terminated due to refusal on basalt. Backfilled with bentonite.					
				3								

SOIL BOREHOLE PD05

AECOM

Project Name: **Melbourne Airport**

Client: **Australian Pacific Airports**

Location: **Melbourne Airport**

Drilling Contractor: **Construction Science**

Project No.: **60692389**

Logged By: **AS**

Bore Size: **mm**

Relative Level: **mRL**

Drill Type:

Checked By: **LM**

Total Depth: **1.50 m**

Coordinates: **mN** **mE**

Drill Model:

Date Started: **29-1-23**

Drill Fluid:

Date Finished: **29-1-23**

Permit No:

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			CONCRETE.	D				
							FILL: Crushed rock. GRAVEL with sand, black, fine to coarse grained sand, subangular fine grained gravel.	D				
				1			Silty CLAY with trace gravel, dark grey, high plasticity, subangular fine grained gravel.	W	St		1.5	PD05_0.8
							CLAY, brown, low plasticity.	W	St		0	PD05_1.0
							End of hole at 1.5 mbgl. Target depth achieved.					

02. SOIL BORE LOG MELBOURNE AIRPORT.GPJ WCC_AUS.GDT 10/3/23

SOIL BOREHOLE PD06

AECOM

Project Name: **Melbourne Airport**

Client: **Australian Pacific Airports**

Location: **Melbourne Airport**

Drilling Contractor: **Construction Science**

Project No.: **60692389**

Logged By: **AS**

Checked By: **LM**

Date Started: **29-1-23**

Date Finished: **29-1-23**

Bore Size: **mm**

Total Depth: **1.50 m**

Relative Level: **mRL**

Coordinates: **mN** **mE**

Permit No:

Drill Type:

Drill Model:

Drill Fluid:

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			CONCRETE.	D				
							FILL: Crushed rock. GRAVEL with sand, black, fine to coarse grained sand, subangular fine grained gravel.	D				
				1			Silty CLAY with trace gravel, dark grey, high plasticity, subangular fine grained gravel.	W	St		1.5	PD06_0.8
							CLAY, brown, low plasticity.	W	St		0	PD06_1.0
							End of hole at 1.5 mbgl. Target depth achieved.					

SOIL BOREHOLE PD07

Project Name:	**Melbourne Airport**	Client:	**Australian Pacific Airports**
Drilling Contractor:	**Construction Science**	Location:	**Melbourne Airport**
Project No.:	**60692389**		
Logged By:	**AS**	Bore Size:	**mm**
Checked By:	**LM**	Total Depth:	**1.50 m**
Date Started:	**29-1-23**	Coordinates:	**mN** **mE**
Date Finished:	**29-1-23**	Permit No:	
Relative Level:	**mRL**	Drill Type:	
		Drill Model:	
		Drill Fluid:	

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			CONCRETE.	D				
							FILL: Crushed rock.	D				
											0	PD07_0.6
				1			Silty CLAY with trace gravel, dark grey, high plasticity, subangular fine grained gravel.	W	St			
							CLAY, brown, low plasticity.	W	St		0	PD07_1.2
							End of hole at 1.5 mbgl. Target depth achieved.					

SOIL BOREHOLE PD11

AECOM

Project Name: **Melbourne Airport**

Client: **Australian Pacific Airports**

Location: **Melbourne Airport**

Drilling Contractor: **Construction Science**

Project No.: **60692389**

Logged By: **BE**

Bore Size: **mm**

Relative Level: **mRL**

Drill Type:

Checked By: **LM**

Total Depth: **1.50 m**

Coordinates: **mN** **mE**

Drill Model:

Date Started: **29-1-23**

Drill Fluid:

Date Finished: **29-1-23**

Permit No:

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			ASPHALT.					
							FILL: Crushed rock capping.			0.5		PD11_0.1
							FILL: Sandy GRAVEL, brown, fine to coarse grained sand, medium to coarse grained gravel, slightly moist.	M	D	1.1		PD11_0.5
				1			CLAY with trace gravel, grey, high plasticity, coarse gravel.	M	S	0.3		PD11_1.2
							End of hole at 1.5 mbgl. Target depth achieved.					

SOIL BOREHOLE PD12

AECOM

Project Name:	**Melbourne Airport**	Client:	**Australian Pacific Airports**
Drilling Contractor:	**Construction Science**	Location:	**Melbourne Airport**
Project No.:	**60692389**		
Logged By:	**BE**	Bore Size:	**mm**
Checked By:	**LM**	Total Depth:	**1.50 m**
Date Started:	**31-1-23**	Coordinates:	**mN** **mE**
Date Finished:	**29-1-23**	Permit No:	
Relative Level:	**mRL**	Drill Type:	
		Drill Model:	
		Drill Fluid:	

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			ASPHALT.					
							FILL: Crushed rock of fine to coarse gravel and fine to coarse sand.				0.4	PD12_0.05
							CLAY with trace gravel, grey, high plasticity, angular gravel.	M	S		0.3	PD12_0.1
											0.2	PD12_0.5
							From 0.9 mbgl becoming grey-brown, stiff and slightly moist.	D/M	St			
				1							0.4	PD12_1.0
							End of hole at 1.5 mbgl. Target depth achieved.					

AECOM

TEST PIT TP04

Excavation Contractor: **Construction Science**

Equipment:

Bucket Size: **mm**

Logged By: **AS**

Checked By: **LM**

Date Started: **30-1-23**

Date Finished: **30-1-23**

Test Pit Length: **m**

Test Pit Width: **m**

Test Pit Depth: **1.9 m**

Relative Level: **mRL**

Coordinates: **mN** **mE**

Permit No:

Project Name: **Melbourne Airport**

Project No.: **60692389**

Client: **Australian Pacific Airports**

Location: **Melbourne Airport**

Ground Water Data and Comments	Depth (m)	Graphic Log	Classification	DESCRIPTION OF STRATA	Moisture Condition	Sample Interval	PID (ppm)	Sample ID
	0			CLAY, brown, medium plasticity, rootlets. Basalt coobles and boulders present.	D			
				Sandy clayey GRAVEL, brown, fine to coarse grained sand, subangular fine to coarse gravel of basalt.	D		0	TP04_0.2
							0	TP04_0.5
				From 0.8 mbgl becoming wet with depth, high plasticity.	D			
	1						0	TP04_1.0
				Silty CLAY, grey, medium plasticity.	W			
							0	TP04_1.8
				End of hole at 1.9 mbgl. Terminated due to basalt boulders at base. Backfilled with in-situ material.				

AECOM

TEST PIT TP05

Excavation Contractor: **Construction Science**

Equipment:

Bucket Size: **mm**

Logged By: **AS**

Checked By: **LM**

Date Started: **30-1-23**

Date Finished: **30-1-23**

Test Pit Length: **m**

Test Pit Width: **m**

Test Pit Depth: **1.8 m**

Relative Level: **mRL**

Coordinates: **mN** **mE**

Permit No:

Project Name: **Melbourne Airport**

Project No.: **60692389**

Client: **Australian Pacific Airports**

Location: **Melbourne Airport**

Ground Water Data and Comments	Depth (m)	Graphic Log	Classification	DESCRIPTION OF STRATA	Moisture Condition	Sample Interval	PID (ppm)	Sample ID
	0			FILL: Sandy gravelly CLAY, brown, low to medium plasticity, fine grained sand, angular to subrounded fine to coarse grained gravel of basalt, rootlets. DCP refusal at 0.2 mbgl - difficulty excavating.	D			
				Sandy clayey GRAVEL, brown, fine to coarse grained sand, subangular to angular fine to coarse grained gravel of basalt. Cobbles and boulders present.	W		0	TP05_0.2
				Sandy gravelly CLAY, brown, fine to coarse grained sand, subangular fine to coarse grained gravel of basalt.	W		0	TP05_0.5
				CLAY, brown, medium plasticity, firm.	W			
	1						0	TP05_1.0
				CLAY with sand, grey, medium plasticity, sand is fine to coarse, firm, trace gravel of basalt.	W			
							0	TP05_1.7
				End of hole at 1.8 mbgl. Terminated due to refusal on basalt. Backfilled with in-situ material.				

AECOM

TEST PIT TP06

Excavation Contractor: **Construction Science**

Equipment:

Bucket Size: **mm**

Logged By: **AS**

Checked By: **LM**

Date Started: **30-1-23**

Date Finished: **30-1-23**

Test Pit Length: **m**

Test Pit Width: **m**

Test Pit Depth: **1.8 m**

Relative Level: **mRL**

Coordinates: **mN** **mE**

Permit No:

Project Name: **Melbourne Airport**

Project No.: **60692389**

Client: **Australian Pacific Airports**

Location: **Melbourne Airport**

Ground Water Data and Comments	Depth (m)	Graphic Log	Classification	DESCRIPTION OF STRATA	Moisture Condition	Sample Interval	PID (ppm)	Sample ID
	0			CLAY with gravel, brown mottled grey, low to medium plasticity, angular to subangular fine to medium grained gravel of basalt, rootlets.	D			
							0	TP06_0.2
				CLAY with trace gravel, brown, medium to high plasticity angular to subangular fine to coarse grained gravel of basalt.	W		0	TP06_0.5
	1			CLAY, dark grey mottled grey, medium to high plasticity.	W		0	TP06_1.0
				CLAY, grey, medium to high plasticity. Boulders < 300mm.	M		0	TP06_1.8
				End of hole at 1.8 mbgl. Terminated due to refusal on basalt at base.				

SOIL BOREHOLE PD05

AECOM

Project Name: **Melbourne Airport**

Client: **Australian Pacific Airports**

Location: **Melbourne Airport**

Drilling Contractor: **Construction Science**

Project No.: **60692389**

Logged By: **AS**

Bore Size: **mm**

Relative Level: **mRL**

Drill Type:

Checked By: **LM**

Total Depth: **1.50 m**

Coordinates: **mN** **mE**

Drill Model:

Date Started: **29-1-23**

Drill Fluid:

Date Finished: **29-1-23**

Permit No:

Method	Casing	Penetration (S M H R)	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	LITHOLOGICAL DESCRIPTION Type, plasticity / particle size, colour, secondary / minor components (e.g., "trace"), additional observations	Moisture Condition	Consistency Relative Density	Sample Interval	PID (ppm)	Sample ID
				0			CONCRETE.	D				
							FILL: Crushed rock. GRAVEL with sand, black, fine to coarse grained sand, subangular fine grained gravel.	D				
				1			Silty CLAY with trace gravel, dark grey, high plasticity, subangular fine grained gravel.	W	St		1.5	PD05_0.8
							CLAY, brown, low plasticity.	W	St		0	PD05_1.0
							End of hole at 1.5 mbgl. Target depth achieved.					

02. SOIL BORE LOG MELBOURNE AIRPORT.GPJ WCC_AUS.GDT 10/3/23

Appendix D

Laboratory Reports

ANZ

FQM - Generic Chain of Custody Form

AECOM

Q4AN(EV)-007-FM1

77 ½

CONSULTANT: AECOM	ADDRESS / OFFICE:	[redacted]	Destination Laboratory ALS
[redacted]	SITE: Melbourne Airport		
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:		
RESULTS REQUIRED (Date):	QUOTE # Melbourne Airport - dated 7.11.2022	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate)

Intact: Yes No N/A

SAMPLE TEMPERATURE

CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) and zinc (Zn);

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1 - P-30/3 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP231X Perand poly-fluroalkyl substances (PFAS) and associated substances extended 28 suite including	TPH/BTEXN/ PFAS short suite and metals (6)	TRH C6 – C10 and BTEXN										Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles														HOLD	
1	QC13_29012023	S	29/01/23		J	2		1	1												
→	QC14_29012023	S	29/01/23		J	2		1	1												Please forward to Eurofins
2	BH03_0.2	S	29/01/23		J	2		1	1												
3	BH03_0.5	S	29/01/23		J	2	1														
4	BH03_1.0	S	29/01/23		J	2														X	
5	BH03_2.0	S	29/01/23		J	2														X	
6	BH03_3.0	S	29/01/23		J	2														X	
7	BH05_0.2	S	29/01/23		J	2														X	
8	BH05_0.5	S	29/01/23		J	2		1	1												
9	BH05_1.0	S	29/01/23		J	2														X	
10	BH05_2.0	S	29/01/23		J	1	1														
11	BH04_0.2	S	29/01/23		J	2														X	
12	BH04_0.5	S	29/01/23		J	2		1	1												
13	QC15_290123	W	29/01/23		2VS, 1AG, 1N, 2P	6				1										X	
14	PD05_0.42	S	29/01/23		J	2	1														
15	PD05_1.5	S	29/01/23		J	2														X	
16	PD06_0.42	S	29/01/23		J	2														X	
17	PD06_0.8	S	29/01/23		J	2														X	
18	PD06_1.2	S	29/01/23		J	2														X	

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
[redacted]	Date: 29/01/23	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. Soil Container Codes: Jar = Unpreserved glass jar

COC Page 1 of 2

JW (ALS) 6/2

DATE: 06/02/23
TIME: 4:40 pm
COURIER: TES
TEMPERATURE 0.4
ATTEMP TO CHILL: YES NO

4/2/23

ANZ

FQM - Generic Chain of Custody Form

AECOM

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	[redacted]	Destination Laboratory: ALS
[redacted]	SITE: Melbourne Airport		
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:		
RESULTS REQUIRED (Date):	QUOTE Nr Melbourne Airport - dated 7.11.2022	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate)
Intact: Yes No N/A

SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL

antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) and zinc (Zn);

Notes: e.g. Highly contaminated samples

e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note S = Soil, W=Water)				CONTAINER INFORMATION		Suite 1: P-36/3 EPA 1828.3 Table 2 Limited Suite - excl. EDTA	Suite 2: 5-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: PFAS PFOS and poly-fluoroalkyl substances (PFAS) and associated substances extended 28 suite including perfluoro octane	TPH&BTEXN/PFAS short suite and metals (8)	TRH C6 - C10 and BTEXN									HOLD	
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles														
19	PD07_0.6	S	30/01/23		J	2													X	
20	PD07_1.2	S	30/01/23		J	2													X	
21	QC15_290123	W	29/01/23		2VS, 1AG, 1N, 2P						1									
22	QC16_290123	W	29/01/23		IV	1						1								
23	QC17_300123	W	30/01/23		2VS, 1AG, 1N, 2P	6					1									
24	QC18_300123	S	30/01/23		1V	1						1								
25	QC19_300123	S	30/01/23		J	5													X	
→	QC20_300123	S	30/01/23		J	5													X	Please forward to Eurofins
26	TP05_0.2	S	30/01/23		J	2													X	
27	TP06_0.5	S	30/01/23		J	2	1													
28	TP06_1.0	S	30/01/23		J	2		1	1											
29	TP06_1.8	S	30/01/23		J	2													X	
30	TP05_0.2	S	30/01/23		J	2	1													
31	TP05_0.5	S	30/01/23		J	2													X	
32	TP05_1.0	S	30/01/23		J	2		1	1											
33	TP05_2.0	S	30/01/23		J	2													X	
34	TP04_0.2	S	30/01/23		J	2													X	
35	TP04_0.5	S	30/01/23		J	2	1													
36	TP04_1.0	S	30/01/23		J	2		1	1											
37	TP04_1.9	S	30/01/23		J	2													X	

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
[redacted]	Date: 30/01/23	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic;
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. *Soil Container Codes:* Jar = Unpreserved glass jar

COC Page 2 of 2

77 4/2

#9/2/2022
Dec
6/2/23

[redacted]

INFO: INTERNAL EMAIL - Sent from your own Eurofins email domain.

[redacted]

Please append this email to the COC.

Kind Regards,

[redacted]

[redacted]

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.
Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

Hello

Its task 6

[redacted]

[redacted]

Can you please send me the task number for this one?

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM	ADDRESS / OFFICE:
[redacted]	SITE: Melbourne Airport
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:
RESULTS REQUIRED (Date):	QUOTE N Melbourne Airport - dated

FOR LABORATORY USE ONLY	COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOS
COOLER SEAL (circle appropriate)	antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (C
Intact: Yes No N/A	(Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury
SAMPLE TEMPERATURE	(Ni), selenium (Se) and zinc (Zn);
CHILLED: Yes No	

SAMPLE INFORMATION (note: S = Soil, W=Water)	CONTAINER INFORMA

Kind regards,

[redacted]

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

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NATA# 1261 Site# 18217

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NATA# 1261 Site# 25466

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Mayfield West NSW 2304
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IANZ# 1327

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

Sample Receipt Advice

Company name:	AECOM Aust Pty Ltd Melbourne
Contact name:	[redacted]
Project name:	MELBOURNE AIRPORT
Project ID:	60692389
Turnaround time:	5 Day
Date/Time received	Feb 6, 2023 4:40 PM
Eurofins reference	961022

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 : .4 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

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

[redacted]

Results will be delivered electronically via email to [redacted]

Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.

eurofins

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

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Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Project Name: MELBOURNE AIRPORT
Project ID: 60692389

Order No.: 60692389/6
Report #: 961022
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Feb 6, 2023 4:40 PM
Due: Feb 13, 2023
Priority: 5 Day

[redacted]

[redacted]

Sample Detail						HOLD	Polycyclic Aromatic Hydrocarbons	BTEX	NEPM 2013 Metals : Metals M13	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	QC14_29012023	Jan 29, 2023		Soil	M23-Fe0011643		X	X	X	X	X	X
2	QC20_300123	Jan 30, 2023		Soil	M23-Fe0011644	X						
Test Counts						1	1	1	1	1	1	1

[redacted]

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
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Feb 08, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 08, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 08, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Feb 08, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	Feb 08, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chromium (hexavalent)	Melbourne	Feb 08, 2023	28 Days
- Method: LTM-INO-4230 Hexavalent Chromium by UV-Vis			
Heavy Metals	Melbourne	Feb 08, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Feb 06, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Feb 08, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Feb 08, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Feb 08, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Feb 08, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Feb 06, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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IANZ# 1290

Company Name: AECOM Aust Pty Ltd Melbourne
Address: Collins Square, Tower 2, Level 11, 727 Collins Street
Docklands
VIC 3008

Project Name: MELBOURNE AIRPORT
Project ID: 60692389

Order No.: 60692389/6
Report #: 961022
Phone: 03 9653 1234
Fax: 03 9654 7117

Received: Feb 6, 2023 4:40 PM
Due: Feb 13, 2023
Priority: 5 Day
Contact Name: [redacted]

[redacted]

Sample Detail						HOLD	Polycyclic Aromatic Hydrocarbons	BTEX	NEPM 2013 Metals : Metals M13	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	QC14_29012023	Jan 29, 2023		Soil	M23-Fe0011643		X	X	X	X	X	X
2	QC20_300123	Jan 30, 2023		Soil	M23-Fe0011644	X						
Test Counts						1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

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

Terms

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

QC - Acceptance Criteria

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

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

Results <10 times the LOR: No Limit

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

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

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

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

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.

[redacted]

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	

[redacted]

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	112			70-130	Pass	
TRH C10-C14	%	105			70-130	Pass	
TRH C6-C10	%	104			70-130	Pass	
TRH >C10-C16	%	107			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	99			70-130	Pass	
Toluene	%	105			70-130	Pass	
Ethylbenzene	%	103			70-130	Pass	
m&p-Xylenes	%	101			70-130	Pass	
Xylenes - Total*	%	99			70-130	Pass	

[redacted]

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	89			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	108			70-130	Pass	
Anthracene	%	104			70-130	Pass	
Benz(a)anthracene	%	110			70-130	Pass	
Benzo(a)pyrene	%	99			70-130	Pass	
Benzo(b&j)fluoranthene	%	125			70-130	Pass	
Benzo(g.h.i)perylene	%	82			70-130	Pass	
Benzo(k)fluoranthene	%	114			70-130	Pass	
Chrysene	%	99			70-130	Pass	
Dibenz(a.h)anthracene	%	110			70-130	Pass	
Fluoranthene	%	102			70-130	Pass	
Fluorene	%	113			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	78			70-130	Pass	
Naphthalene	%	126			70-130	Pass	
Phenanthrene	%	90			70-130	Pass	
Pyrene	%	130			70-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	107			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	115			80-120	Pass	
Beryllium	%	100			80-120	Pass	
Boron	%	106			80-120	Pass	
Cadmium	%	106			80-120	Pass	
Cobalt	%	116			80-120	Pass	
Copper	%	109			80-120	Pass	
Lead	%	113			80-120	Pass	
Manganese	%	120			80-120	Pass	
Mercury	%	118			80-120	Pass	
Nickel	%	117			80-120	Pass	
Selenium	%	114			80-120	Pass	
Zinc	%	119			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	88			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	97			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	97			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	93			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	96			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	108			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	103			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	100			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	96			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	102			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	112			50-150	Pass	

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Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	98			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	94			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	93			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	98			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	103			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	91			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	95			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	92			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	92			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	87			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	87			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	95			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	90			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	92			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)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	100			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M23-Fe0011622	NCP	%	112			70-130	Pass	
TRH C10-C14	M23-Fe0011760	NCP	%	102			70-130	Pass	
TRH C6-C10	M23-Fe0011622	NCP	%	105			70-130	Pass	
TRH >C10-C16	M23-Fe0011760	NCP	%	104			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M23-Fe0011622	NCP	%	94			70-130	Pass	
Toluene	M23-Fe0011622	NCP	%	97			70-130	Pass	
Ethylbenzene	M23-Fe0011622	NCP	%	98			70-130	Pass	
m&p-Xylenes	M23-Fe0011622	NCP	%	97			70-130	Pass	
o-Xylene	M23-Fe0011622	NCP	%	93			70-130	Pass	
Xylenes - Total*	M23-Fe0011622	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M23-Fe0011622	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M23-Fe0016561	NCP	%	85			70-130	Pass	
Acenaphthylene	M23-Fe0016561	NCP	%	95			70-130	Pass	
Anthracene	M23-Fe0016561	NCP	%	91			70-130	Pass	
Benz(a)anthracene	M23-Fe0016561	NCP	%	71			70-130	Pass	
Benzo(a)pyrene	M23-Fe0016561	NCP	%	79			70-130	Pass	
Benzo(b&j)fluoranthene	M23-Fe0016561	NCP	%	101			70-130	Pass	
Benzo(g.h.i)perylene	M23-Fe0016561	NCP	%	93			70-130	Pass	
Benzo(k)fluoranthene	M23-Fe0016561	NCP	%	107			70-130	Pass	
Chrysene	M23-Fe0016561	NCP	%	99			70-130	Pass	
Dibenz(a.h)anthracene	M23-Fe0016561	NCP	%	108			70-130	Pass	
Fluoranthene	M23-Fe0016561	NCP	%	87			70-130	Pass	
Fluorene	M23-Fe0016561	NCP	%	96			70-130	Pass	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Indeno(1.2.3-cd)pyrene	M23-Fe0016561	NCP	%	103			70-130	Pass	
Naphthalene	M23-Fe0016561	NCP	%	108			70-130	Pass	
Phenanthrene	M23-Fe0016561	NCP	%	77			70-130	Pass	
Pyrene	M23-Fe0016561	NCP	%	86			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M23-Fe0011554	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M23-Fe0011879	NCP	%	105			75-125	Pass	
Beryllium	M23-Fe0011879	NCP	%	97			75-125	Pass	
Boron	M23-Fe0011879	NCP	%	127			75-125	Fail	Q08
Cadmium	M23-Fe0011879	NCP	%	110			75-125	Pass	
Cobalt	M23-Fe0011879	NCP	%	117			75-125	Pass	
Copper	M23-Fe0011879	NCP	%	112			75-125	Pass	
Lead	M23-Fe0011879	NCP	%	113			75-125	Pass	
Manganese	M23-Fe0011879	NCP	%	69			75-125	Fail	Q08
Mercury	M23-Fe0011879	NCP	%	124			75-125	Pass	
Nickel	M23-Fe0011879	NCP	%	112			75-125	Pass	
Selenium	M23-Fe0011879	NCP	%	104			75-125	Pass	
Zinc	M23-Fe0011879	NCP	%	110			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M23-Fe0011882	NCP	%	97			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M23-Fe0011882	NCP	%	99			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M23-Fe0011882	NCP	%	93			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-Fe0011882	NCP	%	93			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M23-Fe0011882	NCP	%	97			50-150	Pass	
Perfluorononanoic acid (PFNA)	M23-Fe0011882	NCP	%	103			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M23-Fe0011882	NCP	%	100			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-Fe0011882	NCP	%	97			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-Fe0011882	NCP	%	100			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-Fe0011882	NCP	%	94			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-Fe0011882	NCP	%	104			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M23-Fe0011882	NCP	%	100			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Fe0011882	NCP	%	109			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Fe0011882	NCP	%	96			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Fe0011882	NCP	%	104			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Fe0011882	NCP	%	96			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Fe0011882	NCP	%	95			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Fe0011882	NCP	%	97			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorobutanesulfonic acid (PFBS)	M23-Fe0011882	NCP	%	84			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-Fe0011882	NCP	%	95			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-Fe0011882	NCP	%	87			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-Fe0011882	NCP	%	82			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-Fe0011882	NCP	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-Fe0011882	NCP	%	91			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-Fe0011882	NCP	%	100			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-Fe0011882	NCP	%	91			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Fe0011882	NCP	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Fe0011882	NCP	%	107			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Fe0011882	NCP	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Fe0011882	NCP	%	90			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M23-Fe0011649	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M23-Fe0011474	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M23-Fe0011474	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M23-Fe0011474	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	M23-Fe0011649	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M23-Fe0011474	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M23-Fe0011474	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M23-Fe0011474	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M23-Fe0011649	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M23-Fe0011649	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M23-Fe0011649	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M23-Fe0011649	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M23-Fe0011649	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	M23-Fe0011649	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M23-Fe0011649	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

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Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(b&j)fluoranthene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M23-Fe0011114	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M23-Fe0011307	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
% Moisture	M23-Fe0011636	NCP	%	5.7	6.4	12	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M23-Fe0011879	NCP	mg/kg	4.5	4.7	3.7	30%	Pass	
Beryllium	M23-Fe0011879	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	M23-Fe0011879	NCP	mg/kg	49	47	4.5	30%	Pass	
Cadmium	M23-Fe0011879	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Cobalt	M23-Fe0011879	NCP	mg/kg	9.1	9.1	<1	30%	Pass	
Copper	M23-Fe0011879	NCP	mg/kg	16	17	2.1	30%	Pass	
Lead	M23-Fe0011879	NCP	mg/kg	10	10	<1	30%	Pass	
Manganese	M23-Fe0011879	NCP	mg/kg	410	410	<1	30%	Pass	
Mercury	M23-Fe0011879	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M23-Fe0011879	NCP	mg/kg	15	15	3.6	30%	Pass	
Selenium	M23-Fe0011879	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Zinc	M23-Fe0011879	NCP	mg/kg	28	29	3.6	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

[redacted]

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Fe0011869	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Fe0011869	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorononanesulfonic acid (PFNS)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Fe0011869	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Fe0011869	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

[redacted]

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
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).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Authorised by:

[redacted]

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.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2301163**	Page	: 1 of 44
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: [redacted]
Project	: 60692389	Date Samples Received	: 27-Jan-2023 16:15
Order number	: 60692389	Date Analysis Commenced	: 27-Feb-2023
C-O-C number	: ----	Issue Date	: 02-Mar-2023 17:35
Sampler	: [redacted]		
Site	: Melbourne Airport - Pavement Upgrades		
Quote number	: EN/004/21		
No. of samples received	: 44		
No. of samples analysed	: 22		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG048G: EM2301163 #12 Poor matrix spike recovery for Hexavalent Chromium due to sample matrix. Confirmed by re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Sum of chlorinated hydrocarbons includes carbon tetrachloride, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichlorothene, trans-1,2-dichlorothene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, vinyl chloride, hexachlorobutadiene and methylene chloride.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- EK040T: EM2301163 #12 Poor matrix spike recovery for Total fluoride due to matrix effects.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	62	122
Toluene-D8	2037-26-5	64	120
4-Bromofluorobenzene	460-00-4	66	124
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			

Sub Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP080S: TPH(V)/BTEX Surrogates - Continued			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037 26 5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2301163**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [redacted]	[redacted]	
Telephone	: ----		
Facsimile	: ----		
Project	: 60692389	Page	: 1 of 7
Order number	: ----	Quote number	: ES2021AECOMAU0044 (EN/004/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Melbourne Airport - Pavement Upgrades		
Sampler	: [redacted]		

Dates

Date Samples Received	: 27-Jan-2023 16:15	Issue Date	: 27-Feb-2023
Client Requested Due Date	: 01-Mar-2023	Scheduled Reporting Date	: **01-Mar-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 4	Temperature	: 2.0°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 44 / 20

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-07 TRH/BTEXN/PAH (SIM)
EM2301163-003	24-Jan-2023 00:00	PD08_0.5		✓	✓			
EM2301163-004	24-Jan-2023 00:00	PD08_0.9	✓					
EM2301163-005	24-Jan-2023 00:00	PD08_1.1	✓					
EM2301163-006	24-Jan-2023 00:00	BH6_0.2	✓					
EM2301163-007	24-Jan-2023 00:00	BH6_0.5		✓	✓	✓		
EM2301163-008	24-Jan-2023 00:00	BH6_1.0		✓			✓	✓
EM2301163-009	24-Jan-2023 00:00	BH6_2.0	✓					
EM2301163-010	24-Jan-2023 00:00	BH6_3.0	✓					
EM2301163-011	24-Jan-2023 00:00	BH6_4.0	✓					
EM2301163-012	24-Jan-2023 00:00	BH2_0.2		✓	✓	✓		
EM2301163-013	24-Jan-2023 00:00	BH2_0.5		✓			✓	✓
EM2301163-014	24-Jan-2023 00:00	BH2_1.0	✓					
EM2301163-015	24-Jan-2023 00:00	BH2_2.0	✓					
EM2301163-016	24-Jan-2023 00:00	BH2_3.0	✓					
EM2301163-017	25-Jan-2023 00:00	BH8_0.2	✓					
EM2301163-018	25-Jan-2023 00:00	BH8_0.5		✓	✓	✓		
EM2301163-019	25-Jan-2023 00:00	BH8_1.0		✓			✓	✓
EM2301163-020	26-Jan-2023 00:00	TP08_0.2	✓					
EM2301163-021	26-Jan-2023 00:00	TP08_0.5		✓		✓		
EM2301163-022	26-Jan-2023 00:00	TP08_1.0		✓	✓		✓	✓
EM2301163-023	26-Jan-2023 00:00	TP08_1.9	✓					
EM2301163-024	25-Jan-2023 00:00	BH8_2.0	✓					
EM2301163-025	25-Jan-2023 00:00	BH8_2.4	✓					
EM2301163-026	25-Jan-2023 00:00	BH7_0.2		✓		✓		
EM2301163-027	25-Jan-2023 00:00	BH7_0.5		✓	✓		✓	✓
EM2301163-028	25-Jan-2023 00:00	BH7_1.0	✓					
EM2301163-029	26-Jan-2023 00:00	TP07_0.2		✓	✓	✓		
EM2301163-030	26-Jan-2023 00:00	TP07_0.5	✓					
EM2301163-031	26-Jan-2023 00:00	TP07_1.0	✓					
EM2301163-032	26-Jan-2023 00:00	TP07_2.0	✓					
EM2301163-033	26-Jan-2023 00:00	TP09_0.2		✓	✓	✓		
EM2301163-034	26-Jan-2023 00:00	TP09_0.5		✓			✓	✓
EM2301163-036	26-Jan-2023 00:00	TP09_1.0	✓					
EM2301163-037	26-Jan-2023 00:00	TP09_1.3	✓					
EM2301163-040	24-Jan-2023 00:00	QC03_240123		✓				

			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-07 TRH/BTEXN/PAH (SIM)
EM2301163-044	25-Jan-2023 00:00	QC07_250123		✓				
EM2301163-045	26-Jan-2023 00:00	QC08_260123		✓	✓	✓		
EM2301163-048	26-Jan-2023 00:00	QC12_260123		✓				
EM2301163-049	24-Jan-2023 00:00	PD10_0.4-0.8	✓					

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - S-18 TRH(C6-C9)/BTEXN
EM2301163-040	24-Jan-2023 00:00	QC03_240123	✓
EM2301163-044	25-Jan-2023 00:00	QC07_250123	✓
EM2301163-048	26-Jan-2023 00:00	QC12_260123	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	(On Hold) WATER No analysis requested
EM2301163-038	24-Jan-2023 00:00	QC01_240123	✓
EM2301163-042	25-Jan-2023 00:00	QC05_250123	✓
EM2301163-046	26-Jan-2023 00:00	QC10_260123	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231 PFAS - Short Suite (12 analytes)	WATER - W-05T TRH/BTEXN/8 Metals (Total)
EM2301163-043	25-Jan-2023 00:00	QC06_250123	✓	✓
EM2301163-047	26-Jan-2023 00:00	QC11_260123	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EA001: pH in soil using a 0.01M CaCl2 extract							
BH2_0.2	Soil Glass Jar - Unpreserved	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_0.5	Soil Glass Jar - Unpreserved	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.2	Soil Glass Jar - Unpreserved	01-Feb-2023	01-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH8_0.5	Soil Glass Jar - Unpreserved	01-Feb-2023	01-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC08_260123	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP07_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP08_0.5	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP09_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
EA055: Moisture Content							
BH2_0.2	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH2_0.5	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_0.5	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_1.0	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.2	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.5	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH8_0.5	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH8_1.0	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC03_240123	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC07_250123	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC08_260123	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC12_260123	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP07_0.2	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP08_0.5	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP08_1.0	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP09_0.2	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP09_0.5	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
EG035T: Total Mercury by FIMS							
BH2_0.2	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH2_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_1.0	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.2	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH8_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH8_1.0	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC08_260123	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP07_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×

TP08_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EG048G: Hexavalent Chromium by Alkaline Digestion and DA Finish							
BH2_0.2	Soil Glass Jar - Unpreserved	21-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	22-Feb-2023	01-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	01-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	23-Feb-2023	02-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	02-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	02-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	02-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EK026SF: Total Cyanide by Segmented Flow Analyser							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EK030SF: Cyanide Amenable to Chlorination (Segmented Flow Analyser)							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EK040T: Total Fluoride							
BH2_0.2	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP066-EM: PCB - VIC EPA 448.3 Screen							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP071: TRH - Semivolatile Fraction							
BH2_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP071-EM: TRH - Semivolatile Fraction							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP074-UT: Volatile Organic Compounds - Ultra-trace							

BH2_0.2	Soil Glass Jar - Unpreserved	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	01-Feb-2023	01-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	01-Feb-2023	01-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP075(SIM): PAH/Phenols (SIM)							
BH2_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP075-EM: Semivolatile Organic Compounds - Waste Classification							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP080: TRH Volatiles/BTEX							
BH2_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC03_240123	Soil Glass Jar - Unpreserved	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC07_250123	Soil Glass Jar - Unpreserved	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC12_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP236: 2,4-D and Tributyltin Oxide (TBTO) by LCMSMS							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	19-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	20-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	21-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗

Matrix: **WATER** Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EG035T: Total Mercury by FIMS							
QC06_250123	Clear Plastic Bottle - Nitric Acid;	----	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC11_260123	Clear Plastic Bottle - Nitric Acid;	----	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP071: TRH - Semivolatile Fraction							
QC06_250123	Amber Glass Bottle - Unpreserv	01-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC11_260123	Amber Glass Bottle - Unpreserv	02-Feb-2023	14-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP080: TRH Volatiles/BTEX							
QC06_250123	Amber VOC Vial - Sulfuric Acid	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC11_260123	Amber VOC Vial - Sulfuric Acid	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗

Requested Deliverables

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EM2301163**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [redacted]	E-mail	[redacted]
Telephone	: ----	Telephone	
Facsimile	: ----	Facsimile	
Project	: 60692389	Page	: 1 of 7
Order number	: 60692389	Quote number	: ES2021AECOMAU0044 (EN/004/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Melbourne Airport - Pavement Upgrades		
Sampler	: [redacted]		

Dates

Date Samples Received	: 27-Jan-2023 16:15	Issue Date	: 28-Feb-2023
Client Requested Due Date	: 01-Mar-2023	Scheduled Reporting Date	: **01-Mar-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 4	Temperature	: 2.0°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 44 / 22

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method Sample ID	Sample Container Received	Preferred Sample Container for Analysis
2,4-D and Tributyltin Oxide (TBTO) by LCMSMS : EP236		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Cyanide Amenable to Chlorination (Segmented Flow Analyser) : EK030SF		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Formaldehyde : EP010		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Hexavalent Chromium by Alkaline Digestion and DA Finish : EG048G		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
PAH/Phenols (SIM) : EP075(SIM)		
PD08_0.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
PCB - VIC EPA 448.3 Screen : EP066-EM		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Semivolatile Organic Compounds - Waste Classification : EP075-EM		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Total Cyanide by Segmented Flow Analyser : EK026SF		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Total Fluoride : EK040T		
PD08_1.1	- HDPE Soil Jar	- Pulp Bag
TRH - Semivolatile Fraction : EP071		
PD08_0.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
TRH - Semivolatile Fraction : EP071-EM		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
TRH Volatiles/BTEX : EP080		
PD08_0.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Volatile Organic Compounds : EP074		
PD08_0.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Volatile Organic Compounds - Ultra-trace : EP074-UT		
PD08_1.1	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-07 TRH/BTEXN/PAH (SIM)	SOIL - S-10 TRH/VOC/PAH
EM2301163-003	24-Jan-2023 00:00	PD08_0.5		✓	✓		✓		✓
EM2301163-004	24-Jan-2023 00:00	PD08_0.9	✓						
EM2301163-005	24-Jan-2023 00:00	PD08_1.1		✓		✓			
EM2301163-006	24-Jan-2023 00:00	BH6_0.2	✓						
EM2301163-007	24-Jan-2023 00:00	BH6_0.5		✓	✓	✓			
EM2301163-008	24-Jan-2023 00:00	BH6_1.0		✓			✓	✓	
EM2301163-009	24-Jan-2023 00:00	BH6_2.0	✓						
EM2301163-010	24-Jan-2023 00:00	BH6_3.0	✓						
EM2301163-011	24-Jan-2023 00:00	BH6_4.0	✓						
EM2301163-012	24-Jan-2023 00:00	BH2_0.2		✓	✓	✓			
EM2301163-013	24-Jan-2023 00:00	BH2_0.5		✓			✓	✓	
EM2301163-014	24-Jan-2023 00:00	BH2_1.0	✓						

			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-07 TRH/BTEXN/PAH (SIM)	SOIL - S-10 TRH/VOC/PAH
EM2301163-015	24-Jan-2023 00:00	BH2_2.0	✓						
EM2301163-016	24-Jan-2023 00:00	BH2_3.0	✓						
EM2301163-017	25-Jan-2023 00:00	BH8_0.2	✓						
EM2301163-018	25-Jan-2023 00:00	BH8_0.5		✓	✓	✓			
EM2301163-019	25-Jan-2023 00:00	BH8_1.0		✓			✓	✓	
EM2301163-020	26-Jan-2023 00:00	TP08_0.2	✓						
EM2301163-021	26-Jan-2023 00:00	TP08_0.5		✓		✓			
EM2301163-022	26-Jan-2023 00:00	TP08_1.0		✓	✓		✓	✓	
EM2301163-023	26-Jan-2023 00:00	TP08_1.9	✓						
EM2301163-024	25-Jan-2023 00:00	BH8_2.0	✓						
EM2301163-025	25-Jan-2023 00:00	BH8_2.4	✓						
EM2301163-026	25-Jan-2023 00:00	BH7_0.2		✓		✓			
EM2301163-027	25-Jan-2023 00:00	BH7_0.5		✓	✓		✓	✓	
EM2301163-028	25-Jan-2023 00:00	BH7_1.0	✓						
EM2301163-029	26-Jan-2023 00:00	TP07_0.2		✓	✓	✓			
EM2301163-030	26-Jan-2023 00:00	TP07_0.5	✓						
EM2301163-031	26-Jan-2023 00:00	TP07_1.0		✓			✓	✓	
EM2301163-032	26-Jan-2023 00:00	TP07_2.0	✓						
EM2301163-033	26-Jan-2023 00:00	TP09_0.2		✓	✓	✓			
EM2301163-034	26-Jan-2023 00:00	TP09_0.5		✓			✓	✓	
EM2301163-036	26-Jan-2023 00:00	TP09_1.0	✓						
EM2301163-037	26-Jan-2023 00:00	TP09_1.3	✓						
EM2301163-040	24-Jan-2023 00:00	QC03_240123		✓					
EM2301163-044	25-Jan-2023 00:00	QC07_250123		✓					
EM2301163-045	26-Jan-2023 00:00	QC08_260123		✓	✓	✓			
EM2301163-048	26-Jan-2023 00:00	QC12_260123		✓					
EM2301163-049	24-Jan-2023 00:00	PD10_0.4-0.8	✓						

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - S-18 TRH(C6-C9)/BTEXN
EM2301163-040	24-Jan-2023 00:00	QC03_240123	✓
EM2301163-044	25-Jan-2023 00:00	QC07_250123	✓
EM2301163-048	26-Jan-2023 00:00	QC12_260123	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) WATER No analysis requested	WATER - EP231 PFAS - Short Suite (12 analytes)	WATER - W-05T TRH/BTEXN/8 Metals (Total)
EM2301163-038	24-Jan-2023 00:00	QC01_240123	✓		
EM2301163-042	25-Jan-2023 00:00	QC05_250123	✓		
EM2301163-043	25-Jan-2023 00:00	QC06_250123		✓	✓
EM2301163-046	26-Jan-2023 00:00	QC10_260123	✓		
EM2301163-047	26-Jan-2023 00:00	QC11_260123		✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EA001: pH in soil using a 0.01M CaCl2 extract							
BH2_0 2	Soil Glass Jar Unpreserved	31 Jan 2023	28 Feb 2023	27 Jan 2023	✓	27 Feb 2023	×
BH6_0.5	Soil Glass Jar - Unpreserved	31-Jan-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.2	Soil Glass Jar - Unpreserved	01-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH8_0.5	Soil Glass Jar - Unpreserved	01-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
PD08_1.1	HDPE Soil Jar	31-Jan-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
QC08_260123	Soil Glass Jar - Unpreserved	02-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP07_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP08_0.5	Soil Glass Jar - Unpreserved	02-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
TP09_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	28-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
EA055: Moisture Content							
BH2_0.2	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH2_0 5	Soil Glass Jar Unpreserved		07 Feb 2023	27 Jan 2023	✓	27 Feb 2023	×
BH6_0.5	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH6_1.0	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.2	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×
BH7_0.5	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	×

BH8_0.5	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC03_240123	Soil Glass Jar - Unpreserved	----	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC07_250123	Soil Glass Jar - Unpreserved	----	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC12_260123	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_1.0	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	----	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EG035T: Total Mercury by FIMS							
BH2_0.2	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH2_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_0.5	HDPE Soil Jar	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_1.0	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EG048G: Hexavalent Chromium by Alkaline Digestion and DA Finish							
BH2_0.2	Soil Glass Jar - Unpreserved	21-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	22-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	21-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	23-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	07-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EK026SF: Total Cyanide by Segmented Flow Analyser							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	07-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EK030SF: Cyanide Amenable to Chlorination (Segmented Flow Analyser)							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	07-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	13-Mar-2023	27-Jan-2023	✓	27-Feb-2023	✗
EK040T: Total Fluoride							
BH2_0.2	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	22-Feb-2023	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗

PD08_1.1	HDPE Soil Jar	21-Feb-2023	21-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	23-Feb-2023	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP066-EM: PCB - VIC EPA 448.3 Screen							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP071: TRH - Semivolatile Fraction							
BH2_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_0.5	HDPE Soil Jar	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP071-EM: TRH - Semivolatile Fraction							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP074: Volatile Organic Compounds							
PD08_0.5	HDPE Soil Jar	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP074-UT: Volatile Organic Compounds - Ultra-trace							
BH2_0.2	Soil Glass Jar - Unpreserved	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	01-Feb-2023	01-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	01-Feb-2023	01-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	31-Jan-2023	31-Jan-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	02-Feb-2023	02-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP075(SIM): PAH/Phenols (SIM)							
BH2_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_0.5	HDPE Soil Jar	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP075-EM: Semivolatile Organic Compounds - Waste Classification							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP080: TRH Volatiles/BTEX							

BH2_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_1.0	Soil Glass Jar - Unpreserved	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_1.0	Soil Glass Jar - Unpreserved	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_0.5	HDPE Soil Jar	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC03_240123	Soil Glass Jar - Unpreserved	07-Feb-2023	07-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC07_250123	Soil Glass Jar - Unpreserved	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC12_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_1.0	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP236: 2,4-D and Tributyltin Oxide (TBTO) by LCMSMS							
BH2_0.2	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH6_0.5	Soil Glass Jar - Unpreserved	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH7_0.2	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
BH8_0.5	Soil Glass Jar - Unpreserved	08-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
PD08_1.1	HDPE Soil Jar	07-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC08_260123	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP07_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP08_0.5	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
TP09_0.2	Soil Glass Jar - Unpreserved	09-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗

Matrix: **WATER** Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EG035T: Total Mercury by FIMS							
QC06_250123	Clear Plastic Bottle - Nitric Acid;	----	22-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC11_260123	Clear Plastic Bottle - Nitric Acid;	----	23-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP071: TRH - Semivolatile Fraction							
QC06_250123	Amber Glass Bottle - Unpreserv	01-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC11_260123	Amber Glass Bottle - Unpreserv	02-Feb-2023	09-Apr-2023	27-Jan-2023	✓	27-Feb-2023	✗
EP080: TRH Volatiles/BTEX							
QC06_250123	Amber VOC Vial - Sulfuric Acid	08-Feb-2023	08-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗
QC11_260123	Amber VOC Vial - Sulfuric Acid	09-Feb-2023	09-Feb-2023	27-Jan-2023	✓	27-Feb-2023	✗

Requested Deliverables

[redacted]

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM		ADDRESS / OFFICE:	
PROJECT MANAGER (PM): [redacted]		SITE: Melbourne Airport	
PROJECT NUMBER & TASK COI 60692389		P.O. NO.:	
RESULTS REQUIRED (Date):		QUOTE NO.:	

[redacted]

Destination Laboratory

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

URGENT

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		ANALYSIS REQUIRED
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	PD04 - 0.5	S	24/01/23		Jar	2	+
	PD09 - 1.0	S				2	+
	PD08 - 0.5					2	+
	PD08 - 0.9					2	+
	PD08 - 1.1					2	+
	BH6 - 0.2					2	+
	BH6 - 0.5					2	+
	BH6 - 1.0					2	+
	BH6 - 2.0					2	+
	BH6 - 3.0					2	X
	BH6 - 4.0					2	X
	BH02 - 0.2					2	X
	BH02 - 0.5					2	X
	BH02 - 1.0					2	X
	BH02 - 2.0					2	X
	BH02 - 3.0					2	X
	BH8 - 0.2		25/01/23			2	X
	BH8 - 0.5		25/01/23			2	X
	BH8 - 1.0		25/01/23			2	X

Environmental Division
Melbourne
Work Order Reference
EM2301163

Telephone : +61-3-8549 9600

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name:	Date:	Name: [redacted]	Date: 27-1-23	Name:	Date:	Con' Note No:
Of:	Time:	Of:	Time: 16:15	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page of

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM		ADDRESS / OFFICE:	[redacted]
PROJECT MANAGER (PM): [redacted]		SITE: Melbourne Airport	
PROJECT NUMBER & TASK COI 60692389		P.O. NO.:	
RESULTS REQUIRED (Date):		QUOTE NO.:	

Destination Laboratory

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	BH8 - 2.0	S	25/01/23		Jar	2	X
	BH8 - 2.4	S				2	X
	BH7 - 0.2	S				2	X
	BH7 - 0.5	S				2	X
	BH7 - 1.0	S				2	X
	QC01 - 240123	W	24/01/23		VS, AG, N	4	X
	QC02 - 240123	W			" "	4	X
	QC03 - 240123	S			Jar	1	X
	QC04 - 240123	S			Jar	1	X
	QC05 - 250123	W	25/01/23		VS, AG, N	4	X
	QC06 - 250123	W			" "	4	X
	QC07 - 250123	S			Jar	1	X
	TP07 - 0.2	S	26/01/23		Jar	2	X
	TP07 - 0.5	S				2	X
	TP07 - 1.0	S				2	X
	TP07 - 2.0	S				2	X
	TP04 - 0.2	S				2	X
	TP04 - 0.5	S				2	X
	TP01 - 1.0	S				2	X

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name:	Date:	Name: [redacted]	Date: 27-1-23	Name:	Date:	Con' Note No:
Of:	Time:	Of:	Time: 16:15	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page of

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	[redacted]
PROJECT MANAGER (PM): [redacted]	SITE: Melbourne Airport	
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:	
RESULTS REQUIRED (Date):	QUOTE NO.:	

Destination Laboratory

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	TP09_1.3	S	26/01/23		SG Jar	2	X
	TP08_0.2	S	26		Jar	2	X
	TP08_0.5	S			Jar	2	X
	TP08_1.0	S			Jar	2	X
	TP08_1.9	S			Jar	2	X
	QC08_260123	S			Jar	2	X
→	QC09_260123	S			Jar	2	X Please send to Eurofins
	QC10_260123	W			VS, AG, N	4	X
	QC11_260123	W			VS, AG, N	4	X
	QC12_260123	S	V		Jar	1	X

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name:	Date:	Name [redacted]	Date 24-1-23	Name:	Date:	Con' Note No:
Of:	Time:	Of:	Time: 16:15	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes**: Jar = Unpreserved glass jar

COC Page of

ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM	ADDRESS / OFFICE: [redacted]	Destination Laboratory: ALS
PROJECT MANAGER (PM): [redacted]	SITE: Melbourne Aiport - Pavement Upgrades	
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:	
RESULTS REQUIRED (Date):	QUOTE N: Melbourne Airport - dated 7.11.2022	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate)

Intact: Yes No NA

SAMPLE TEMPERATURE

CHILLED Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) and zinc (Zn);

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1 : P-30/3 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP231X Per-and poly-fluoroalkyl substances (PFAS) and associated substances extended 28 suite including													Notes: e.g. Highly contaminated samples e.g. "High PAHs expected", Extra volume for QC or trace LORs etc.
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles															HOLD	
1	PD09_0.5		24/01/23				1		1													
2	PD09_1.0	S	24/01/23		J			1														
3	PD08_0.5	S	24/01/23		J			1	1													
4	PD08_0.9	S	24/01/23		J																X	
5	PD08_1.1	S	24/01/23		J		1															
6	BH5_0.2	S	24/01/23		J																X	
7	BH5_0.5	S	24/01/23		J		1		1													
8	BH5_1.0	S	24/01/23		J			1														
9	BH5_2.0	S	24/01/23		J																X	
10	BH5_3.0	S	24/01/23		J																X	
11	BH5_4.0	S	24/01/23		J																X	
12	BH2_0.2	S	24/01/23		J		1		1													
13	BH2_0.5	S	24/01/23		J			1														
14	BH2_1.0	S	24/01/23		J																X	
15	BH2_2.0	S	24/01/23		J																X	
16	BH2_3.0	S	24/01/23		J																X	
17	BH8_0.2	S	25/01/23		J																X	
18	BH8_0.5	S	25/01/23		J		1		1													
19	BH8_1.0	S	25/01/23		J			1														

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]		Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page of

CONSULTANT: AECOM	ADDRESS / OFFICE:
PROJECT MANAGER (PM): [redacted]	SITE: **Melbourne Aiport - Pavement Upgrades**
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:
RESULTS REQUIRED (Date):	QUOTE № Melbourne Airport - dated 7.11.2022

[redacted]

Destination Laboratory

ALS

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate)

Intact: Yes No N/A

SAMPLE TEMPERATURE

CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected", Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water) / CONTAINER INFORMATION

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	Suite 1 : P-30/3 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP231X Per-and poly-fluoroalkyl substances (PFAS) and associated substances	HOLD
-										
20	TP08_0.2	S	26/01/23		J					X
21	TP08_0.5	S	26/01/23		J		1			
22	TP08_1.0	S	26/01/23		J			1	1	
23	TP08_1.9	S	26/01/23		J					X
24	BH6_2.0	S	25/01/23		J					X
25	BH6_2.4	S	25/01/23		J					X
26	BH7_0.2	S	25/01/23		J		X			
27	BH7_0.5	S	25/01/23		J			X	x	
28	BH7_1.0	S	25/01/23		J					X
29	TP07_0.2	S	26/01/23		J		X		x	
30	TP07_0.5	S	26/01/23		J			X		
31	TP07_1.0	S	26/01/23		J					X
32	TP07_2.0	S	26/01/23		J					X
33	TP09_0.2	S	26/01/2023		J		X		X	
34	TP09_0.5	S	26/01/2023		J			X		
35	TP09_0.5	S	26/01/2023		J					X
36	TP09_1.0	S	26/01/2023		J					X
37	TP09_1.3	S	26/01/2023		J					X

Glass Jar Broke on receipt

Same. N.R.

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]	Date: 07/12/2022	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag **Soil Container Codes**: Jar = Unpreserved glass jar

CONSULTANT: AECOM	ADDRESS / OFFICE:	[redacted]	Destination Laboratory ALS
PROJECT MANAGER (PM): [redacted]	SITE: Melbourne Aport - Pavement Upgrades		
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:		
RESULTS REQUIRED (Date):	QUOTE N: Melbourne Airport - dated 7.11.2022	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1: P-20/5 EPA 1626.2 Table 2 Limited Suite - excl. EDTA	Suite 2: 5-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP231X Perand poly fluoroalkyl substances (PFAS) and associated substances	TPH/BTEXN/ PFAS short suite and metals (8)	TRH C6 - C10 and BTEXN								HOLD	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles														
-																				
38	QC01_240123	W	24/01/23		VS, AG, N														X	
39	QC02_240123	W	24/01/23		VS, AG, N						1									
40	QC03_240123	W	24/01/23		V							1								
41	QC04_240123	W	24/01/23		V							1								
42	QC05_250123	W	25/01/23		VS, AG, N														X	
43	QC06_250123	W	25/01/23		VS, AG, N						1									
44	QC07_250123	W	25/01/23		V							1								
45	QC08_260123	S	26/01/23		J		1		1											Please send QC09 to Eurofins for the same analysis
→	QC09_270123	S	26/01/23		J		1		1											
46	QC10_260123	W	26/01/23		VS, AG, N														X	
47	QC11_260123	W	26/01/23		VS, AG, N						1									
48	QC12_260123	S	26/01/23		J							1								
49	POLO-0.4-0.8	S	24/1																	

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]		Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag
Soil Container Codes: Jar = Unpreserved glass jar

ALSCompass
SAMPLING *Intelligence*

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Right Solutions • Right Partner
www.alsglobal.com

[redacted]

[redacted]

See attached COC that for samples at Melbourne Airport on hold. Can you advise how quickly these samples can be analysed. Somehow this COC was not sent on, so I'll need to get them sorted asap.

[redacted]

[redacted]

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
[redacted]
aecom.com

Delivering a better world
LinkedIn | Twitter | Facebook | Instagram

[redacted]

[redacted]

[redacted]

See attached.

[redacted]

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2301412**	Page	: 1 of 17
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: 727 COLLINS STREET DOCKLANDS 3008	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: [redacted]
Project	: 60692389	Date Samples Received	: 01-Feb-2023 12:00
Order number	: 60692389	Date Analysis Commenced	: 07-Feb-2023
C-O-C number	: ----	Issue Date	: 09-Feb-2023 18:15
Sampler	: [redacted]		
Site	: Melbourne Airport		
Quote number	: EN/004/21		
No. of samples received	: 10		
No. of samples analysed	: 6		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

[redacted]

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG048G: EM2301412 #5 Poor matrix spike recovery for Hexavalent Chromium due to sample matrix. Confirmed by re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Sum of chlorinated hydrocarbons includes carbon tetrachloride, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichlorothene, trans-1,2-dichlorothene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, vinyl chloride, hexachlorobutadiene and methylene chloride.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- TIME SORTING COMMENCED: 1730 TIME PLACED IN FRIDGE: 1800
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	62	122
Toluene-D8	2037-26-5	64	120
4-Bromofluorobenzene	460-00-4	66	124
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			

Sub Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP080S: TPH(V)/BTEX Surrogates - Continued			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037 26 5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2301412**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: 727 COLLINS STREET DOCKLANDS 3008	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [redacted]	E-mail	[redacted]
Telephone	: ----	Telephone	
Facsimile	: ----	Facsimile	
Project	: 60692389	Page	: 1 of 3
Order number	: 60692389	Quote number	: ES2021AECOMAU0044 (EN/004/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Melbourne Airport		
Sampler	: [redacted]		

Dates

Date Samples Received	: 01-Feb-2023 12:00	Issue Date	: 06-Feb-2023
Client Requested Due Date	: 09-Feb-2023	Scheduled Reporting Date	: **09-Feb-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 1.7°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 10 / 6

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- TIME SORTING COMMENCED: 1730 TIME PLACED IN FRIDGE: 1800
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-10 TRH/VOC/PAH
EM2301412-001	31-Jan-2023 00:00	PD11_0.1		✓	✓		✓	✓
EM2301412-002	31-Jan-2023 00:00	PD11_0.5		✓		✓		
EM2301412-003	31-Jan-2023 00:00	PD11_1.2	✓					
EM2301412-004	31-Jan-2023 00:00	PD12_0.05	✓					
EM2301412-005	31-Jan-2023 00:00	PD12_0.1		✓		✓		
EM2301412-006	31-Jan-2023 00:00	PD12_0.5		✓	✓		✓	✓
EM2301412-007	31-Jan-2023 00:00	PD12_1.0	✓					
EM2301412-008	31-Jan-2023 00:00	QC21_310123	✓					

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231 PFAS - Short Suite (12 analytes)
EM2301412-009	31-Jan-2023 00:00	QC23_310123	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - W-05 TRH/BTEXN/8 Metals	WATER - W-18 TRH(C6 - C9)/BTEXN
EM2301412-009	31-Jan-2023 00:00	QC23_310123	✓	
EM2301412-010	31-Jan-2023 00:00	QC24_310123		✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

[redacted]

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE: [redacted]
PROJECT MANAGER (PM): [redacted]	SITE: Melbourne Airport
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:
RESULTS REQUIRED (Date):	QUOTE NO.:

Destination Laboratory: ALS

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
All samples on HOLD
[redacted] to email analysis

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	PD11_0.1	S	31/1/25		JAR, PFAS	2	
	PD11_0.5					2	
	PD11_1.2					2	
	PD12_0.05					2	
	PD12_0.1					2	
	PD12_0.5					2	
	PD12_1.0					2	
	QC21					2	
	QC22	W				2	Please forward to Eurofins
	QC23	W			ZVS, AG, IV, 2P	6	
	QC24	W			IVS	1	

Environmental Division
Melbourne
Work Order Reference
EM2301412

Telephone : +61-3-8549 9600

	RECEIVED BY			METHOD OF SHIPMENT
Name: [redacted]	Name:	Date:	Name: [redacted]	Con' Note No:
Of:	Of:	Time:	Of:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page / of /

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	[redacted]
PROJECT MANAGER (PM): [redacted]	SITE: Melbourne Airport	
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:	
RESULTS REQUIRED (Date):	QUOTE NO.:	

Destination Laboratory: Eurofins

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
Sample on Hold
[redacted]
ld email analysis

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	QC22	S	31/1/23		JAR, PFAS	2	X

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]	Date: 1/2/23	Name:	Date:	Name:	Date:	Con' Note No:
Of:	Time:	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page 1 of 1

1/2 1200

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: [redacted]
PROJECT MANAGER (PM): [redacted]	SITE: Melbourne Airport	MOBILE:
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:	EMAIL REPORT
RESULTS REQUIRED (Date):	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

Destination Laboratory: ALS

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
All samples on HOLD
[redacted] to email analysis

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	PD11_0.1	S	31/1/23		JAR, PFAS	2	
	PD11_0.5					2	
	PD11_1.2					2	
	PD12_0.05					2	
	PD12_0.1					2	
	PD12_0.5					2	
	PD12_1.0					2	
	QC21					2	
	QC22	W				2	
	QC23	W			2VS, 1AG, 1V, 2P	6	
	QC24	W			1VS	1	

Please forward to Eurofins

Environmental Division
Melbourne
Work Order Reference
EM2301412

Telephone : ~ 61-3-8549 9600

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]	Date: 1/2/23	Name:	Date:	Name [redacted]	Date: 1/2	Con' Note No:
Of:	Time:	Of:	Time:	Of:	Time: 15:00	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

COC Page 1 of 1

ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM	ADDRESS / OFFICE:	[redacted]	Destination Laboratory: ALS
PROJECT MANAGER (P[redacted]	SITE: Melbourne Airport		
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:		
RESULTS REQUIRED (Date):	QUOTE N Melbourne Airport - dated 7.11.2022	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY

COOLER SEAL (present/intact/dd)

Intact: Yes No N/A

SAMPLE TEMPERATURE

CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) and zinc (Zn);

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1 : P-30/3 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - 33	Suite 3: EP231X Per-and poly-fluoroalkyl substances (PFAS) and associated substances extended 28 suite including	TPH/BTEXN PFAS short-list+Lead metals (6)	TRH C6 – C10 and BTEXN							HOLD	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles													
1	PD11_0.1	S	31/01/23		J	2		1	1										
2	PD11_0.5	S	31/01/23		J	2	1												
3	PD11_1.2	S	31/01/23		J	2												X	
4	PD12_0.05	S	31/01/23		J	2												X	
5	PD12_0.1	S	31/01/23		J	2	1												
6	PD12_0.5	S	31/01/23		J	2		1	1										
7	PD12_1.0	S	31/01/23		J	2												X	
8	QC21_310123	S	31/01/23		J	2												X	
9	QC22_310123	S	31/01/23		J	2												X	Please forward to Eurofins
10	QC23_310123	W	31/01/23		2VS, 1AG, 1N, 2P	6					1								
	QC24_310123	W	31/01/23		1VS	1						1							

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]	Date: 01/02/23	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic

V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;

F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. *Soil Container Codes:* Jar = Unpreserved glass jar

COC Page 1 of 1

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2301773**	Page	: 1 of 39
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +[redacted]
Project	: 60692389	Date Samples Received	: 31-Jan-2023 12:50
Order number	: 60692389	Date Analysis Commenced	: 06-Feb-2023
C-O-C number	: ----	Issue Date	: 09-Feb-2023 23:50
Sampler	: [redacted]		
Site	: Melbourne Airport		
Quote number	: EN/004/21		
No. of samples received	: 39		
No. of samples analysed	: 18		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]		

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG048G: EM2301412 #5 Poor matrix spike recovery for Hexavalent Chromium due to sample matrix. Confirmed by re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074-UT: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Sum of chlorinated hydrocarbons includes carbon tetrachloride, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichlorothene, trans-1,2-dichlorothene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, vinyl chloride, hexachlorobutadiene and methylene chloride.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP074-WF: Where reported, Sum of trichlorobenzenes is the sum of the reported concentrations of 1,2,3-Trichlorobenzene and 1,2,4-Trichlorobenzene, and 1,3,5-Trichlorobenzene at or above the LOR.
- EP236: Tributyl tin is reported as Tributyl tin oxide under the conservative assumption that all of the measured Tributyl tin is present as Tributyl tin oxide.
- TIME SORTING COMMENCED: 1250 TIME PLACED IN FRIDGE: 1410
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	122
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	62	122
Toluene-D8	2037-26-5	64	120
4-Bromofluorobenzene	460-00-4	66	124
EP074S: VOC Surrogates (Ultra-Trace)			
1.2-Dichloroethane-D4	17060-07-0	59	119
Toluene-D8	2037-26-5	55	117
4-Bromofluorobenzene	460-00-4	59	123
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP075S: Acid Extractable Surrogates (Waste Classification)			
Phenol-d6	13127-88-3	63	134
2-Chlorophenol-D4	93951-73-6	60	125
2.4.6-Tribromophenol	118-79-6	54	129
EP075T: Base/Neutral Extractable Surrogates (Waste Classification)			
Nitrobenzene-D5	4165-60-0	63	131
1.2-Dichlorobenzene-D4	2199-69-1	61	124
2-Fluorobiphenyl	321-60-8	69	131
Anthracene-d10	1719-06-8	70	133
4-Terphenyl-d14	1718-51-0	59	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			

Sub Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP080S: TPH(V)/BTEX Surrogates - Continued			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037 26 5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EM2301773**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: [redacted]	Contact	: [redacted]
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: [redacted]	E-mail	[redacted]
Telephone	: ----	Telephone	
Facsimile	: ----	Facsimile	
Project	: 60692389	Page	: 1 of 4
Order number	: 60692389	Quote number	: ES2021AECOMAU0044 (EN/004/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Melbourne Airport		
Sampler	: [redacted]		

Dates

Date Samples Received	: 31-Jan-2023 12:50	Issue Date	: 06-Feb-2023
Client Requested Due Date	: 09-Feb-2023	Scheduled Reporting Date	: **09-Feb-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 2.1°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 39 / 18

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.
- **Analytical work for this work order will be conducted at ALS Springvale.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- TIME SORTING COMMENCED: 1250 TIME PLACED IN FRIDGE: 1410
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method Sample ID	Sample Container Received	Preferred Sample Container for Analysis
Total Mercury by FIMS : EG035T		
QC15_290123	- Clear Plastic Bottle - Nitric Acid; Filtered	- Clear Plastic Bottle - Nitric Acid; Unfiltered
QC15_290123 Duplicate of 13	- Clear Plastic Bottle - Nitric Acid; Filtered	- Clear Plastic Bottle - Nitric Acid; Unfiltered
QC17_300123	- Clear Plastic Bottle - Nitric Acid; Filtered	- Clear Plastic Bottle - Nitric Acid; Unfiltered
Total Metals by ICP-MS - Suite A : EG020A-T		
QC15_290123	- Clear Plastic Bottle - Nitric Acid; Filtered	- Clear Plastic Bottle - Nitric Acid; Unfiltered
QC15_290123 Duplicate of 13	- Clear Plastic Bottle - Nitric Acid; Filtered	- Clear Plastic Bottle - Nitric Acid; Unfiltered
QC17_300123	- Clear Plastic Bottle - Nitric Acid; Filtered	- Clear Plastic Bottle - Nitric Acid; Unfiltered

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EM2301773-016 : [29-Jan-2023] : PD06_0.42 - NOT RECEIVED
EM2301773-021 : [29-Jan-2023] : QC15_290123 - Duplicate of 13
EM2301773-039 : [30-Jan-2023] : QC19_300123 - Extra Volume

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-10 TRH/VOC/PAH
EM2301773-001	29-Jan-2023 00:00	0		✓	✓		✓	✓
EM2301773-002	29-Jan-2023 00:00	BH03_0.2		✓	✓		✓	✓
EM2301773-003	29-Jan-2023 00:00	BH03_0.5		✓		✓		
EM2301773-004	29-Jan-2023 00:00	BH03_1.0	✓					
EM2301773-005	29-Jan-2023 00:00	BH03_2.0	✓					
EM2301773-006	29-Jan-2023 00:00	BH03_3.0	✓					
EM2301773-007	29-Jan-2023 00:00	BH05_0.2	✓					
EM2301773-008	29-Jan-2023 00:00	BH05_0.5		✓	✓		✓	✓
EM2301773-009	29-Jan-2023 00:00	BH05_1.0	✓					
EM2301773-010	29-Jan-2023 00:00	BH05_2.0		✓		✓		
EM2301773-011	29-Jan-2023 00:00	BH04_0.2	✓					
EM2301773-012	29-Jan-2023 00:00	BH04_0.5		✓	✓		✓	✓
EM2301773-014	29-Jan-2023 00:00	PD05_0.42		✓		✓		
EM2301773-015	29-Jan-2023 00:00	PD05_1.5	✓					
EM2301773-016	29-Jan-2023 00:00	PD06_0.42 NOT RECEI...	✓					
EM2301773-017	29-Jan-2023 00:00	PD06_0.8	✓					
EM2301773-018	29-Jan-2023 00:00	PD06_1.2	✓					
EM2301773-019	30-Jan-2023 00:00	PD07_0.6	✓					
EM2301773-020	30-Jan-2023 00:00	PD07_1.2	✓					
EM2301773-022	29-Jan-2023 00:00	QC16 290123		✓				

			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - P-30/3 EPA 1828.2 Table 2 Limited Suite (EM)	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-10 TRH/VOC/PAH
EM2301773-024	30-Jan-2023 00:00	QC18_300123		✓				
EM2301773-025	30-Jan-2023 00:00	QC19_300123	✓					
EM2301773-026	30-Jan-2023 00:00	TP06_0.2	✓					
EM2301773-027	30-Jan-2023 00:00	TP06_0.5		✓		✓		
EM2301773-028	30-Jan-2023 00:00	TP06_1.0		✓	✓		✓	✓
EM2301773-029	30-Jan-2023 00:00	TP06_1.8	✓					
EM2301773-030	30-Jan-2023 00:00	TP05_0.2		✓		✓		
EM2301773-031	30-Jan-2023 00:00	TP05_0.5	✓					
EM2301773-032	30-Jan-2023 00:00	TP05_1.0		✓	✓		✓	✓
EM2301773-033	30-Jan-2023 00:00	TP05_2.0	✓					
EM2301773-034	30-Jan-2023 00:00	TP04_0.2	✓					
EM2301773-035	30-Jan-2023 00:00	TP04_0.5		✓		✓		
EM2301773-036	30-Jan-2023 00:00	TP04_1.0		✓	✓		✓	✓
EM2301773-037	30-Jan-2023 00:00	TP04_1.9	✓					
EM2301773-038	30-Jan-2023 00:00	PD06_1.5_290123	✓					
EM2301773-039	30-Jan-2023 00:00	QC19_300123 Extra V...	✓					

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - S-18 TRH(C6-C9)/BTEXN
EM2301773-022	29-Jan-2023 00:00	QC16 290123	✓
EM2301773-024	30-Jan-2023 00:00	QC18_300123	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-05T TRH/BTEXN/8 Metals (Total)
EM2301773-013	29-Jan-2023 00:00	QC15_290123	✓
EM2301773-021	29-Jan-2023 00:00	QC15_290123 Duplica...	✓
EM2301773-023	30-Jan-2023 00:00	QC17_300123	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231 PFAS - Short Su te (12 analytes)
EM2301773-013	29-Jan-2023 00:00	QC15_290123	✓
EM2301773-021	29-Jan-2023 00:00	QC15_290123 Duplica...	✓
EM2301773-023	30-Jan-2023 00:00	QC17_300123	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

[redacted]

Samples on hold electronic CoC

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS / OFFICE:	[redacted]	Destination Laboratory: ALS
PROJECT MANAGER (PM): [redacted]	SITE: Melbourne Airport		
PROJECT NUMBER & TASK COI 60692389	P.O. NO.:		
RESULTS REQUIRED (Date):	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	EPA 1828.2	TRH/BTEX, PAHs, heavy metals	PFAS, PFOS, PFHxS	HOLD	Notes
	PD07-0.6					2				X	
	PD07-1.2					2				X	
	QC16	S			J	1				X	
	QC17300123	W				6				X	
	QC18	S				1				X	
	QC19	S				5				X	FWD TO EUROFINS
	QC20	S				5				X	FWD EUROFINS
	TP06-0.2					2				X	
	TP06-0.5					2				X	
	TP06-1.0					2				X	
	TP06-1.8					2				X	
	TP05-0.2					2				X	
	TP05-0.5					2				X	
	TP05-1.0					2				X	
	TP05-2.0					2				X	
	TP04-0.2					2				X	
	TP04-0.5					2				X	
	TP04-1.0					2				X	
	TP04-1.9					2				X	

Environmental Division Melbourne
Work Order Reference
EM2301773

Telephone : +61-3-8549 9600

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]	Date: 30.01.23	Name: [redacted]	Date: 31/1/23	Name:	Date:	Con' Note No:
Of: AECOM	Time: 30.1.23	Of: ALS	Time: 12:50	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes**: Jar = Unpreserved glass jar

COC Page 2 of 2

ANZ

FQM - Generic Chain of Custody Form

All samples on hold
NOTE: until further notice

Q4AN(EV)-007-FM1

CONSULTANT: AECOM		ADDRESS / OFFICE:	
PROJECT MANAGER (PM): [redacted]		SITE: Melbourne Airport	
PROJECT NUMBER & TASK COI 60692389		P.O. NO.:	
RESULTS REQUIRED (Date):		QUOTE NO.:	

[redacted]

Destination Laboratory: ALS

Electronic CoC

FOR LABORATORY USE ONLY	COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
COOLER SEAL (circle appropriate)	
Intact: Yes No N/A	
SAMPLE TEMPERATURE	
CHILLED: Yes No	

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	EPA 1828 screen	Metals (5 / 15)	TRH TRH BTEX PAH	PFAS compounds extended list	PFAS TOP Beta V	TRH C6 - C10	HOLD	Notes
	QC13-2901 2023	S				2							X	
	QC14-2901 2023	S				2							X	FWP Eurofins
	BH03-0.2	S				2							X	
	BH03-0.5	S				2							X	
	BH03-1.0	S				2							X	
	BH03-2.0	S				2							X	
	BH03-3.0	S				2							X	
	BH05-0.2	S				2							X	
	BH05-0.5	S				2							X	
	BH05-1.0	S				2							X	
	BH05-2.0	S				1							X	
	BH04-0.2	S				2							X	
	BH04-0.5	S				2							X	
	QC15	W				6							X	
	PD05-0.42	S				2							X	
	PD05-1.5	S				2							X	
	PD06-0.42	S				2							X	
	PD06-0.8	S				2							X	
	PD06-1.2	S				2							X	

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]	Date: 29.01.23	Name: [redacted]	Date: 31/1/23	Name:	Date:	Con' Note No:
Of: AECOM	Time:	Of: ALS	Time: 12:50	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes**: Jar = Unpreserved glass jar

COC Page 1 of 2

[redacted]

From: [redacted]
Sent: Thursday, 2 February 2023 2:08 PM
To: COC Melbourne
Subject: AECOM COC - EM2301412 & EM2301321, Project: 60692389
Attachments: 60692389_FQM_Chain_of_Custody_FormCOC2_Melbourne Airport.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: COC for WO on hold

[redacted]

2-4 Westall Rd
Springvale Vic 3171
Australia

[redacted]

See attached.

[redacted]

[redacted]

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61386706800
aecom.com

Delivering a better world
LinkedIn | Twitter | Facebook | Instagram

[redacted]

[redacted]

[redacted]

We have received your samples as per the attached COCs for project 60692389, however analysis has not been allocated.

*Please provide an updated COC with analysis required when possible.

Thank you!

[redacted]

2-4 Westall Road, Springvale VIC 3171

alsglobal.com

Late in 2022 ALS Springvale will be transitioning our telephone services to a different provider. During this time you may notice that the number that we call you on is not consistent with the details listed above. All of our existing numbers are being routed through temporary numbers during this time and will remain active for the entire process. Please continue to contact us via the numbers listed above, we would recommend not saving the temporary numbers to your records as they will be deleted once the transition is complete.

ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM	ADDRESS / OFFICE:	Destination Laboratory
PROJECT MANAGER (PM): [redacted]	SITE: Melbourne Airport	ALS
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:	
RESULTS REQUIRED (Date):	QUOTE N Melbourne Airport - dated 7.11.2022	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate)

Intact: Yes No N/A

SAMPLE TEMPERATURE

CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) and zinc (Zn):

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1 : P-30/3 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP231X Per-and poly-fluoroalkyl substances (PFAS) and associated substances extended 28 suite including		TPH/BTEX/N/ PFAS short suite and metals (8)	TRH C6 – C10 and BTEXN.						HOLD	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles													
1	QC13_29012023	S	29/01/23		J	2		1	1										
→	QC14_29012023	S	29/01/23		J	2		1	1										Please forward to Eurofins
2	BH03_0.2	S	29/01/23		J	2		1	1										
3	BH03_0.5	S	29/01/23		J	2	1												
4	BH03_1.0	S	29/01/23		J	2												X	
5	BH03_2.0	S	29/01/23		J	2												X	
6	BH03_3.0	S	29/01/23		J	2												X	
7	BH05_0.2	S	29/01/23		J	2												X	
8	BH05_0.5	S	29/01/23		J	2		1	1										
9	BH05_1.0	S	29/01/23		J	2												X	
10	BH05_2.0	S	29/01/23		J	1	1												
11	BH04_0.2	S	29/01/23		J	2												X	
12	BH04_0.5	S	29/01/23		J	2		1	1										
13	QC15_290123	W	29/01/23		2VS, 1AG, 1N, 2P	6					1							X	
14	PD05_0.42	S	29/01/23		J	2	1												
15	PD05_1.5	S	29/01/23		J	2												X	
16	PD06_0.42	S	29/01/23		J	2												X	
17	PD06_0.8	S	29/01/23		J	2												X	
18	PD06_1.2	S	29/01/23		J	2												X	

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]	Date: 29/01/23	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic

V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;

F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

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ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM	ADDRESS / OFFICE:	[redacted]	Destination Laboratory
PROJECT MANAGER (PM): [redacted]	SITE: Melbourne Airport		ALS
PROJECT NUMBER & TASK CODE: 60692389	P.O. NO.:		
RESULTS REQUIRED (Date):	QUOTE NI Melbourne Airport - dated 7.11.2022	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY	COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
COOLER SEAL (circle appropriate)	antimony (Sb), arsenic (As), barium (Ba), Beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se) and zinc (Zn);
Intact: Yes No N/A	
SAMPLE TEMPERATURE	
CHILLED: Yes No	

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		Suite 1 : P-30/3 EPA 1828.2 Table 2 Limited Suite - excl. EDTA	Suite 2: S-10 TRH, BTEX, PAHs, Heavy metals - S3	Suite 3: EP233X Perfluoroalkyl substances (PFAS) and associated substances extended 28 suite including medium octane		TPHBTEXN/ PFAS short suite and metals (4)	TRH C6 – C10 and BTEXN.							Notes: e.g. Highly contaminated samples e.g. "High PAHs expected", Extra volume for QC or trace LORs etc.
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles														HOLD	
19	PD07_0.6	S	30/01/23		J	2														X	
20	PD07_1.2	S	30/01/23		J	2														X	
21	QC15_290123	W	29/01/23		2VS, 1AG, 1N, 2P						1										
22	QC16_290123	W	29/01/23		IV	1						1									
23	QC17_300123	W	30/01/23		2VS, 1AG, 1N, 2P	6					1										
24	QC18_300123	S	30/01/23		1V	1						1									
25	QC19_300123	S	30/01/23		J	5														X	
→	QC20_300123	S	30/01/23		J	5														X	Please forward to Eurofins
26	TP06_0.2	S	30/01/23		J	2														X	
27	TP06_0.5	S	30/01/23		J	2	1														
28	TP06_1.0	S	30/01/23		J	2		1	1												
29	TP05_1.8	S	30/01/23		J	2														X	
30	TP05_0.2	S	30/01/23		J	2	1														
31	TP05_0.5	S	30/01/23		J	2														X	
32	TP05_1.0	S	30/01/23		J	2		1	1												
33	TP05_2.0	S	30/01/23		J	2														X	
34	TP04_0.2	S	30/01/23		J	2														X	
35	TP04_0.5	S	30/01/23		J	2	1														
36	TP04_1.0	S	30/01/23		J	2		1	1												
37	TP04_1.9	S	30/01/23		J	2														X	

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: [redacted]	Date: 30/01/23	Name:	Date:	Name:	Date:	Con' Note No:
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserves Plastic

V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;

F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

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Appendix E

Data Validation

LABORATORY DATA VALIDATION REPORT

Project number:	60692389	**Validation by:**	[redacted]	**Date:**	7/3/2023
Client:	APAM				
Site:	Melbourne Airport				
Matrix type:	Soil	**Data verified by:**	[redacted]	**Date:**	7/3/2023
Samples:	32 (Primary)				
Laboratory:	ALS (Primary), Eurofins (Interlab)				
Lab reference:	EM2301163, EM2301773, EM2301412, 961022	**Project Manager:**	[redacted]		

Key Issues: **No Key Issues Identified.**

Handling and preservation

Field documentation including Chain of Custody (COC) information and sampling was completed on 31 January 2023 by suitably qualified AECOM field staff.

Lab Reference	Date of Receipt	Temperature °C
EM2301163	27 January 2023	2.0
EM2301773	31 January 2023	2.1
EM2301412	1 February 2023	1.7
961022	6 February 2023	0.4

Samples were received within the recommended temperature range of ≤6°C for all laboratory batches.

All samples were received at the laboratory in appropriate containers

Holding time compliance

EM2301163

All samples within batch EM2301163 breached the recommended holding times for all analytes prior to instructions being received at the laboratory.

There were soil extraction/preparation holding time breaches for all analyte groups with the exception of:

- Total metals
- Formaldehyde
- PFAS
- Dichlorophenoxyacetic Acid (2.4-D) and Tributyltin Oxide (TBTO)

There were soil analysis holding time breaches for the following analyte groups:

- Moisture content
- Total recoverable mercury
- Fluoride
- Monocyclic aromatic hydrocarbons
- Oxygenated compounds

LABORATORY DATA VALIDATION REPORT

Project number:	60692389	**Validation by:**	[redacted]	**Date:**	7/3/2023
Client:	APAM				
Site:	Melbourne Airport				
Matrix type:	Soil	**Data verified by:**	[redacted]	**Date:**	7/3/2023
Samples:	32 (Primary)				
Laboratory:	ALS (Primary), Eurofins (Interlab)				
Lab reference:	EM2301163, EM2301773, EM2301412, 961022	**Project Manager:**	[redacted]		

- Sulfonated compounds
- Fumigants
- Halogenated aliphatic compounds
- Halogenated aromatic compounds
- Trihalomethanes
- Naphthalene
- Volatile halogenated compounds
- Select samples for total petroleum hydrocarbons and total recoverable hydrocarbons
- BTEXN

For the rinsate water sample, there were extraction/preparation and analysis holding time breaches for the following analyte groups:

- Total recoverable mercury
- Total petroleum hydrocarbons
- Total recoverable hydrocarbons
- BTEXN

There is the potential for these analytes to have degraded over time and not be truly representative of field conditions. However the results affect 5 samples and similar results were observed across the sampling areas as well as the samples being held and refrigerated conditions at the laboratory which would have limited volatile loss.

<u>EM2301773</u>

All samples within batch EM2301773 were within the recommended holding times for all analytes prior to instructions being received at the laboratory.

There were soil extraction/preparation holding time breaches select samples for the following analyte groups:

- pH
- Monocyclic aromatic hydrocarbons
- Oxygenated compounds
- Sulfonated compounds
- Fumigants

LABORATORY DATA VALIDATION REPORT

Project number:	60692389	**Validation by:**	[redacted]	**Date:**	7/3/2023
Client:	APAM				
Site:	Melbourne Airport				
Matrix type:	Soil	**Data verified by:**	[redacted]	**Date:**	7/3/2023
Samples:	32 (Primary)				
Laboratory:	ALS (Primary), Eurofins (Interlab)				
Lab reference:	EM2301163, EM2301773, EM2301412, 961022	**Project Manager:**	[redacted]		

- Halogenated aliphatic compounds
- Halogenate aromatic compounds
- Trihalomethanes
- Naphthalene
- Volatile halogenated compounds
- Total petroleum hydrocarbons
- Total recoverable hydrocarbons

There were soil analysis holding time breaches for select samples for the following analyte groups:

- Monocyclic aromatic hydrocarbons
- Oxygenated compounds
- Sulfonated compounds
- Fumigants
- Halogenated aliphatic compounds
- Halogenated aromatic compounds
- Trihalomethanes
- Naphthalene
- Volatile halogenated compounds
- Total petroleum hydrocarbons
- Total recoverable hydrocarbons

For the rinsate water sample, there were extraction/preparation holding time breaches for the following analyte groups:

- Total petroleum hydrocarbons (QC15_290123)
- Total recoverable hydrocarbons (QC15_290123)

<u>EM230141</u>

No holding time breaches were reported for report EM2301412.

<u>961022</u>

No holding time breaches were reported for report 961022.

LABORATORY DATA VALIDATION REPORT

Project number:	60692389	**Validation by:**	[redacted]	**Date:**	7/3/2023
Client:	APAM				
Site:	Melbourne Airport				
Matrix type:	Soil	**Data verified by:**	[redacted]	**Date:**	7/3/2023
Samples:	32 (Primary)				
Laboratory:	ALS (Primary), Eurofins (Interlab)				
Lab reference:	EM2301163, EM2301773, EM2301412, 961022	**Project Manager:**	[redacted]		

Laboratory Accreditation	ALS and Eurofins are NATA accredited for the analysis conducted: • ALS - NATA Accreditation # 825 • Eurofins - NATA Accreditation # 1261
Frequency of laboratory QC	All laboratory reports reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision for soil samples where relevant. Report EM2301163 reported an insufficient frequency of quality control samples for the rinsate sample for PFAS and TRH (semivolatile fraction). Reports EM2301773 and EM2301412 reported an insufficient frequency of quality control samples for rinsate samples for TRH (semivolatile fraction). As none of these analyte groups were detected in soil samples, this is not expected to affect the reliability of rinsate sample results and cross-contamination associated with equipment is unlikely to have occurred.
Method Blank (MB)	MB concentrations were below the LOR for all samples assessed.
Laboratory Duplicate (LD) Relative Percent Difference (RPD)	LD RPDs met the acceptability limits for all analytes for all batches. The LD RPDs are presented in the laboratory Quality Control Report.
Rinsate Blank	Five rinsates were collected during sampling and reported results below LOR. The required frequency of one rinsate blank sample per day per piece of equipment was met.
Trip Blank	One trip blank was collected for batch EM2301163, EM2301773, EM2301412, 961022 which reported results below LOR and suggests cross contamination within the esky has not occurred.
Trip Spike	Samples were immediately iced after collection and transported to the laboratory. One trip spike was submitted for batch EM2301163 and reported recovery levels within 70-100% of the trip spike control for BTEXN. This suggests loss of volatile hydrocarbons during transportation was low and acceptable.
Laboratory Control Spike (LCS) recovery	LCS recoveries met the acceptability limits.

LABORATORY DATA VALIDATION REPORT

Project number:	60692389	**Validation by:**	[redacted]	**Date:**	7/3/2023
Client:	APAM				
Site:	Melbourne Airport				
Matrix type:	Soil	**Data verified by:**	[redacted]	**Date:**	7/3/2023
Samples:	32 (Primary)				
Laboratory:	ALS (Primary), Eurofins (Interlab)				
Lab reference:	EM2301163, EM2301773, EM2301412, 961022	**Project Manager:**	[redacted]		

Matrix Spike (MS) recovery	Matrix spikes (MS) were conducted on anonymous samples. All MS recoveries (where reported) were within AECOM and/or laboratory limits (70-130%), with the exception of the following: • Chromium – 'recovery less than lower data quality objective'
Surrogate spike (SS) recovery	The SS recoveries were reported within acceptability limits
Comparison of Esdat data and Laboratory Results	No anomalous results between ESDAT output data and laboratory analysis results were noted.

QA/QC Data Evaluation

Field intra-laboratory duplicate samples (BH04_240123)	Intra-laboratory duplicates RPDs were reported within acceptable limits (≤30%, or ≤50% for results 10-20 x LOR, or No Limit for results <10 x LOR) with the following exception: • Phenanthrene – 82%
Inter-laboratory duplicate samples (QC14_240123)	Intra-laboratory duplicates RPDs were reported within acceptable limits (≤30%, or ≤50% for results 10-20 x LOR, or No Limit for results <10 x LOR) with the following exceptions: • Copper – 115% • Lead – 82% • Mercury – 192% • Zinc – 158% • PFOS – 169% • PFHxS – 170% • C6 – C10 fraction – 84% • TRH F1 fraction – 84% • TRH F2 fraction – 195% • >C16 – C34 fraction – 195% • >C34 – C40 fraction – 137% • >C10 – C40 fraction (sum) – 197% • Benzo(a)pyrene TEQ calc (Half) – 100% • Benzo(a)pyrene TEQ calc (Zero) – 100%

LABORATORY DATA VALIDATION REPORT

Project number:	60692389	**Validation by:**	[redacted]	**Date:**	7/3/2023
Client:	APAM				
Site:	Melbourne Airport				
Matrix type:	Soil	**Data verified by:**	[redacted]	**Date:**	7/3/2023
Samples:	32 (Primary)				
Laboratory:	ALS (Primary), Eurofins (Interlab)				
Lab reference:	EM2301163, EM2301773, EM2301412, 961022	**Project Manager:**	[redacted]		

- Phenanthrene – 82%
- Fluoranthene – 131%
- Benz(a)anthracene – 100%
- Benzo(a)pyrene – 82%
- Chrysene – 120%
- Pyrene – 169%
- Sum of PAHs – 88%

Where required for quantitative purposes, the highest concentration from the primary and duplicate pair will be used in the assessment. These elevated RPDs should be considered in the interpretation of analytical data

Overall Assessment

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

Table 1 - Relative Percentage Difference

AECOM

					Metals																				NA		Organotin Compounds	PAH/Phenols (SIM)
					Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Chromium (hexavalent)	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	Naphthalene (value used in F2 calc)	Sum of WA DWER PFAS (n=10)*	Tributyltin oxide	Sum of polycyclic aromatic hydrocarbons
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/kg	mg/kg	mg/kg
LOR					5	2	10	1	10	0.4	2	0.5	2	5	5	5	0.1	2	2	2	2	5	5	5		0.2	0.01	0.5
Location ID	Field ID	Depth	Date	Lab Report Number																								
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	<5	<5	200	1	<50	<1	-	<0.5	-	9	11	-	<0.1	<2	28	<5	<2	<5	-	15	<1	1.0	<0.01	<0.5
	QC08_260123	0.2	26/01/2023	EM2301163	<5	<5	270	1	<50	<1	-	<0.5	-	11	11	-	<0.1	<2	30	<5	<2	<5	-	20	<1	1.6	<0.01	<0.5
				RPD (%):	0	0	30	0	0	0	-	0	-	20	0	-	0	0	7	0	0	0	-	29	0	46	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	-	<5	60	<1	<50	<1	26	-	10	15	8	210	<0.1	-	25	<5	-	-	36	26	-	2.5	-	-
	QC13_29012023	0.5	29/01/2023	EM2301773	-	<5	50	<1	<50	<1	42	-	12	15	14	310	<0.1	-	19	<5	-	-	44	21	-	8.8	-	-
				RPD (%):	-	0	18	0	0	0	47	-	18	0	55	38	0	-	27	0	-	-	20	21	-	112	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	-	<5	60	<1	<50	<1	26	-	10	15	8	210	<0.1	-	25	<5	-	-	36	26	-	2.5	-	-
	QC14_29012023	0.5	29/01/2023	961022	-	2.1	-	<2	14	<0.4	-	<1	13	18	9.3	280	<0.1	-	25	<2	-	-	-	30	-	11	-	-
				RPD (%):	-	0	-	0	0	0	-	-	26	18	15	29	0	-	0	0	-	-	-	14	-	126	-	-

**RPDs have only been considered where a concentration is greater than 1 times the LOR.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 30 (1 - 10 x LOR); 30 (10 - 30 x LOR); 30 (> 30 x LOR))
***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

Legend

Pass	RPD < = 30%
Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 1 - Relative Percentage Difference

AECOM

					Per- and Poly-fluoroalkyl Substances																																			
					Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum (PFHxS + PFOS)	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)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	PFNS	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (FOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Sum of PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)	Sum of US EPA PFAS (PFOS + PFOA)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	UG/KG	UG/KG
LOR					0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.005	0.0002	0.0002	0.0002	0.0002	5,000	0.0005	0.0002	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	5	5
Location ID	**Field ID**	**Depth**	**Date**	**Lab Report Number**																																				
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	<0.0002	0.0010	<0.0002	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0010	-	-
	QC08_260123	0.2	26/01/2023	EM2301163	<0.0002	0.0016	<0.0002	0.0016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0016	-	-
				RPD (%):	0	46	0	46	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	-	0	0	0	0	0	0	0	0	0	46	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.0002	0.0022	0.0003	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0025	-	-
	QC13_29012023	0.5	29/01/2023	EM2301773	<0.0002	0.0080	0.0008	0.0088	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0091	-	-
				RPD (%):	0	114	91	112	0	0	0	0	0	0	0	0	0	40	0	0	-	0	0	0	0	-	0	0	0	0	0	0	0	0	0	114	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.0002	0.0022	0.0003	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0025	-	-
	QC14_29012023	0.5	29/01/2023	961022	<0.005	0.011	<0.005	0.011	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<5,000	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.05	11	11
				RPD (%):	0	133	0	126	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	-

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Legend

Pass	RPD < = 30%
Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 1 - Relative Percentage Difference

AECOM

					Phenols	VOCs in soil	Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons							Major Ions	Monocyclic Aromatic Hydrocarbons														
					Phenols (non-halogenated) EPA Vic	Total +ve MAHs	>C6-C9 fraction	>C10-C14 fraction	>C15-C28 fraction	>C29-C36 fraction	>C10-C36 fraction (sum)	>C6-C10 fraction	>C6-C10 fraction (minus BTEX)(F1)	>C6-C16 fraction (minus Naphthalene)(F2)	>C10-C16 fraction	>C10-C16 fraction	>C16-C34 fraction	>C34-C40 fraction	>C10-C40 fraction (sum)	fluoride	benzene	toluene	ethylbenzene	m&p-Xylene	o-Xylene	Total Xylenes	styrene	isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Total BTEX
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	0.2	10	20	50	50	50	10	10	50	50	100	100	50	40	0.1	0.1	0.1	0.2	0.1	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2
Location ID	**Field ID**	**Depth**	**Date**	**Lab Report Number**																														
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	<1	<0.2	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	280	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-
	QC08_260123	0.2	26/01/2023	EM2301163	<1	<0.2	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	230	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-
				RPD (%):	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
	QC13_29012023	0.5	29/01/2023	EM2301773	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
				RPD (%):	-	-	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
	QC14_29012023	0.5	29/01/2023	961022	-	-	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	-	-	-	-	-	-	-	-
				RPD (%):	-	-	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-

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Legend

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-	Not Reported / Calculated

LOR - Limit of Reporting

Table 1 - Relative Percentage Difference

AECOM

					Polynuclear Aromatic Hydrocarbons																					Phenolic Compounds																	
					Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(a)pyrene TEQ calc(PQL)	Naphthalene	Acenaphthylene	Acenaphthene	Anthracene	fluorene	Phenanthrene	fluoranthene	Benz(a)anthracene	Benzo(k)fluoranthene	Benzo(b&j)fluoranthene	Benzo(b+j) & Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Pyrene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Sum of PAHs	2/4-Methylphenol (m/p-cresol)	Phenol	2-Chlorophenol	2-Methylphenol (o-Cresol)	Total Cresols	2-Nitrophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol	2,6-Dinitro-2-methylphenol	2,4-Dinitrophenol	2-Cyclohexyl-4,6-dinitrophenol	4-Nitrophenol	Dinoseb
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	1	0.03	1	1	1	0.03	1	0.05	0.05	5	5	5	5	5	5
Location ID	**Field ID**	**Depth**	**Date**	**Lab Report Number**																																							
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<5
	QC08_260123	0.2	26/01/2023	EM2301163	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<1	<0.03	<1	<1	<1	<0.03	<1	<0.05	<0.05	<5	<5	<5	<5	<5	<5
				RPD (%):	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC13_29012023	0.5	29/01/2023	EM2301773	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				RPD (%):	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC14_29012023	0.5	29/01/2023	961022	0.6	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				RPD (%):	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Legend

Pass	RPD < = 30%
Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 1 - Relative Percentage Difference

Fumigants

Location ID	Field ID	Depth	Date	Lab Report Number	1,2-Dibromoethane (EDB)	1,2-Dichloropropane	2,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.5	0.5	0.5	0.5	0.5
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	-	-	-	-	-
	QC08_260123	0.2	26/01/2023	EM2301163	-	-	-	-	-
				RPD (%):	-	-	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5
	QC13_29012023	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5
				RPD (%):	0	0	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5
	QC14_29012023	0.5	29/01/2023	961022	-	-	-	-	-
				RPD (%):	-	-	-	-	-

Halogenated Aromatic Compounds

Location ID	Field ID	Depth	Date	Lab Report Number	Bromobenzene	Chlorobenzene	2-Chlorotoluene	4-Chlorotoluene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,3,5-Trichlorobenzene	Trichlorobenzenes (Sum)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.5	0.02	0.5	0.5	0.02	0.5	0.02	0.01	0.01	0.01	0.01
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
	QC08_260123	0.2	26/01/2023	EM2301163	-	<0.02	-	-	<0.02	-	<0.02	<0.01	<0.01	<0.01	<0.01
				RPD (%):	-	0	-	-	0	-	0	0	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
	QC13_29012023	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
				RPD (%):	0	0	0	0	0	0	0	0	0	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
	QC14_29012023	0.5	29/01/2023	961022	-	-	-	-	-	-	-	-	-	-	-
				RPD (%):	-	-	-	-	-	-	-	-	-	-	-

Halogenated Aliphatic Compounds

Location ID	Field ID	Depth	Date	Lab Report Number	Dichlorodifluoromethane (Freon 12)	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichlorofluoromethane (Freon 11)	1,1-Dichloroethene	Iodomethane	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1,1-Trichloroethane	1,1-Dichloropropene	Carbon Tetrachloride	1,2-Dichloroethane	Trichloroethene	Dibromomethane	1,1,2-Trichloroethane	1,3-Dichloropropane	Tetrachloroethene	1,1,1,2-Tetrachloroethane	trans-1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1,1,2,2-Tetrachloroethane	1,2,3-Trichloropropane	Dichloromethane	Pentachloroethane	1,2-Dibromo-3-chloropropane	Hexachlorobutadiene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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					5	5	0.02	5	5	5	0.01	0.5	0.5	0.01	0.02	0.01	0.5	0.01	0.02	0.02	0.5	0.04	0.5	0.02	0.01	0.5	0.5	0.02	0.5	0.4	0.5	0.5	0.02
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02
	QC08_260123	0.2	26/01/2023	EM2301163	-	-	<0.02	-	-	-	<0.01	-	-	<0.01	<0.02	<0.01	-	<0.01	<0.02	<0.02	-	<0.04	-	<0.02	<0.01	-	-	<0.02	-	<0.4	-	-	<0.02
				RPD (%):	-	-	0	-	-	-	0	-	-	0	0	0	-	0	0	0	-	0	-	0	0	-	-	0	-	0	-	-	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
	QC13_29012023	0.5	29/01/2023	EM2301773	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
				RPD (%):	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
	QC14_29012023	0.5	29/01/2023	961022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				RPD (%):	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Legend

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Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 1 - Relative Percentage Difference

AECOM

					Trihalomethanes				Physico-Chemical Parameters			Polychlorinated Biphenyls	Oxygenated Compounds				Sulfonated Compounds	Phthalate Esters	Nitroaromatics and Ketones		Chlorinated Hydrocarbons
					Bromodichloromethane	Bromoform	Chloroform	Dibromochloromethane	% Moisture Content (dried @ 103°C)	pH (CaCl2)	% Moisture Content	Polychlorinated Biphenyls	Vinyl acetate	2-Butanone (MEK)	2-hexanone (MBK)	4-Methyl-2-pentanone (MIBK)	Carbon disulfide	Bis(2-ethylhexyl)phthalate	2,4-Dinitrotoluene	Nitrobenzene	Chlorinated hydrocarbons (sum)
					mg/kg	mg/kg	mg/kg	mg/kg	%	pH Units	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.5	0.5	0.02	0.5	1	0.1	0.1	0.1	5	1	5	5	0.5	0.5	1	0.5	0.01
Location ID	Field ID	Depth	Date	Lab Report Number																	
TP09	TP09_0.2	0.2	26/01/2023	EM2301163	-	-	<0.02	-	-	8.2	22.0	<0.1	-	<1	-	-	-	<0.5	<1.0	<0.5	<0.01
	QC08_260123	0.2	26/01/2023	EM2301163	-	-	<0.02	-	-	8.0	19.6	<0.1	-	<1	-	-	-	<0.5	<1.0	<0.5	<0.01
				RPD (%):	-	-	0	-	-	2	12	0	-	0	-	-	-	0	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	-	-	5.7	-	<5	<5	<5	<5	<0.5	-	-	-	-
	QC13_29012023	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	-	-	7.1	-	<5	<5	<5	<5	<0.5	-	-	-	-
				RPD (%):	0	0	0	0	-	-	22	-	0	0	0	0	0	-	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773	<0.5	<0.5	<0.5	<0.5	-	-	5.7	-	<5	<5	<5	<5	<0.5	-	-	-	-
	QC14_29012023	0.5	29/01/2023	961022	-	-	-	-	9.2	-	-	-	-	-	-	-	-	-	-	-	-
				RPD (%):	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*RPDs have only been considered where a concentration is greater than 1 times the LOR.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 30 (1
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in t

Legend

Pass	RPD < = 30%
Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 1 - Relative Percentage Difference

AECOM

														Organochlorine Pesticides (OC)																				Cyanides		Herbicides	Inorganics
														Aldrin	Dieldrin	Aldrin + Dieldrin	a-BHC	b-BHC	g-BHC	d-BHC (Lindane)	cis-Chlordane	trans-Chlordane	Chlordane	pDD	pDE	pDT	pDT+DDE+DDD	Endosulfan 1	Endosulfan 2	Endosulfan sulfate	Endrin	Endrin aldehyde	Heptachlor	Heptachlor epoxide	Hexachlorobenzene (HCB)	Methoxychlor	Other organochlorine pesticides (sum)	Cyanide (amenable)	Cyanide Total	2,4-Dichlorophenoxy acetic acid	formaldehyde
														mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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														0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.05	0.05	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	1	1	0.001	2
Location ID	Field ID	Depth	Date	Lab Report Number																																	
TP09	TP09_0.2	0.2	26/01/2023	EM2301163										<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
	QC08_260123	0.2	26/01/2023	EM2301163										<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<1	<1	<0.001	<2
				RPD (%):										0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BH04	BH04_0.5	0.5	29/01/2023	EM2301773										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC13_29012023	0.5	29/01/2023	EM2301773										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				RPD (%):										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.5	0.5	29/01/2023	EM2301773										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	QC14_29012023	0.5	29/01/2023	961022										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				RPD (%):										-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**RPDs have only been considered where a concentration is greater than 1 times the LOR.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 30 (1
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in t

Legend

Pass	RPD < = 30%
Fail	RPD > = 30%
-	Not Reported / Calculated

LOR - Limit of Reporting

Table 2 - Rinsate Blanks

AECOM

					Metals													
					Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Copper	Copper (filtered)	Lead	Lead (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
LOR					0.001	0.001	0.0001	0.0001	0.001	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.001	0.001	0.005	0.005
Field ID	**Date**	**Sample Type**	**Matrix Type**	**Lab Report Number**																
QC06_250123	25/01/2023	Rinsate	Water	EM2301163	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	<0.001	-	<0.0001	-	<0.001	-	<0.005	-
QC11_260123	26/01/2023	Rinsate	Water	EM2301163	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	<0.001	-	<0.0001	-	<0.001	-	<0.005	-
QC15_290123	29/01/2023	Rinsate	Water	EM2301773	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	<0.001	-	<0.0001	-	<0.001	-	<0.005
QC17_300123	30/01/2023	Rinsate	Water	EM2301773	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	<0.001	-	<0.0001	-	<0.001	-	<0.005
QC23_310123	31/01/2023	Rinsate	Water	EM2301412	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	<0.001	-	<0.0001	-	<0.001	-	<0.005

Legend
Pass Non-Detect
Fail Detect
LOR: Limit of Reporting

Table 2 - Rinsate Blanks

AECOM

					Per- and Poly-fluoroalkyl Substances														Monocyclic Aromatic Hydrocarbons							Polynuclear Aromatic Hydrocarbons	
					Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum (PFHxS + PFOS)	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)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluoropentanoic acid (PFPeA)	Sum of WA DWER PFAS (n=10)*	Benzene	Toluene	Ethylbenzene	m&p-Xylene	o-Xylene	Total Xylenes	Total BTEX	Naphthalene	Naphthalene (value used in F2 calc)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	UG/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.01	0.01	0.01	0.05	0.05	0.05	0.05	0.02	0.1	0.02	0.02	0.02	0.01	1	2	2	2	2	2	1	5	5
Field ID	**Date**	**Sample Type**	**Matrix Type**	**Lab Report Number**																							
QC06_250123	25/01/2023	Rinsate	Water	EM2301163	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<1	<2	<2	<2	<2	<2	<1	-	<5
QC11_260123	26/01/2023	Rinsate	Water	EM2301163	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<1	<2	<2	<2	<2	<2	<1	-	<5
QC15_290123	29/01/2023	Rinsate	Water	EM2301773	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<1	<2	<2	<2	<2	<2	<1	<5	-
QC17_300123	30/01/2023	Rinsate	Water	EM2301773	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<1	<2	<2	<2	<2	<2	<1	<5	-
QC23_310123	31/01/2023	Rinsate	Water	EM2301412	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<1	<2	<2	<2	<2	<2	<1	<5	-

Legend
Pass Non-Detect
Fail Detect
LOR: Limit of Reporting

Table 3 - Trip Blanks

AECOM

					Monocyclic Aromatic Hydrocarbons												Polynuclear Aromatic Hydrocarbons		
					Benzene	Benzene	Toluene	Toluene	Ethylbenzene	Ethylbenzene	m&p-Xylene	m&p-Xylene	o-Xylene	o-Xylene	Total Xylenes	Total Xylenes	Total BTEX	Total BTEX	Naphthalene	Naphthalene	Naphthalene (value used in F2 calc)
					mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg
LOR					0.2	1	0.5	2	0.5	2	0.5		0.5		0.5		0.2		1	5	
Field ID	Date	Sample Type	Matrix Type	Lab Report Number																	
QC03_240123	24/01/2023	Trip Blank	Water	EM2301163	<0.2		<0.5		<0.5		<0.5		<0.5		<0.5		<0.2		-		<1
QC07_250123	25/01/2023	Trip Blank	Water	EM2301163	<0.2		<0.5		<0.5		<0.5		<0.5		<0.5		<0.2		-		<1
QC12_260123	26/01/2023	Trip Blank	Water	EM2301163	<0.2		<0.5		<0.5		<0.5		<0.5		<0.5		<0.2		-		<1
QC16_290123	29/01/2023	Trip Blank	Water	EM2301773	<0.2		<0.5		<0.5		<0.5		<0.5		<0.5		<0.2		<1		-
QC18_300123	30/01/2023	Trip Blank	Water	EM2301773	<0.2		<0.5		<0.5		<0.5		<0.5		<0.5		<0.2		<1		-
QC24_310123	31/01/2023	Trip Blank	Water	EM2301412		<1		<2		<2		<2		<2		<2		<1		<5	

Legend
Pass Non-Detect
Fail Detect
LOR: Limit of Reporting

Appendix F

Client Review Comments Register