

PLANS AND DOCUMENTS
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DEVELOPMENT APPROVAL

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Butler Partners
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Draft

**Preliminary Contamination Assessment
Industrial Site – Revision One**

89 MacArthur Avenue, Hamilton

Prepared for

CBRE

Project No. 018-150M

4 July 2022

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Drawing No. 3 Rev A	Locality Plan and test Locations
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Appendix B	Environmental Bore and Test Pit Reports with Explanatory Notes
Appendix C	Soil Investigation Laboratory Documentation And RPDs

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SECTION 1 - INTRODUCTION

1.1 Project

It is understood that the site at 89 MacArthur Avenue, Hamilton is occupied by several large industrial sheds historically used for bulk fertiliser storage, surrounded by external hardstand comprising mainly asphalt and concrete. It is understood that the majority of the buildings onsite are vacant with only select warehouses being leased and still currently in use. Economic Development Queensland (EDQ) has appointed CBRE to conduct a feasibility study for the site and as part of that study, a preliminary contamination assessment of the site was required.

The parcel of land comprises a portion of Lot 302 on SP257483, a portion of Lot 2 on SP224040 and Lot 711 on SL4546 and covers a total area of approximately 52,550m² of which approximately 5,650m² is on Lot 2 and comprises suspended concrete deck over water and the balance 46,900m² comprises the land-based portion of the site. Butler Partners has undertaken contamination assessment on the balance of Lot 302 on SP257483, which is listed on the Department of Environment and Science's (DES's) Environmental Management Register (EMR) as a result of the amalgamation of three previous property lots:

Lot 783 on SL4449
Lot 1005 on SL6739
Lot 859 on SL4540

All three of these previous property lots were listed on the EMR. Lot 302 on SP257483 is NOT listed on the CLR. In a search conducted on 26 March 2019, Lot 711 on SL4546 was not listed on the EMR or the CLR, Lot 2 on SP224040 is not listed on the EMR or the CLR.

This report is a revision of the Preliminary Site Assessment issued on the 31 May 2022 and supersedes the previous report. This report includes the radiation results for the ilmenite sand samples that were submitted to Qld Health as well as the recommendations in managing the ilmenite sand identified at the site.

1.2 Scope of Work

The *National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)* (NEPM) suggests a staged approach to undertaking environmental assessment of a site, and the following stages are recommended:

Stage 1 – Preliminary ESA;
Stage 2 – Detailed Site Investigation;
Stage 3 – Health and Environmental Assessment and Determination of RAP; and
Stage 4 – Implementation of Agreed RAP and Validation Sampling.

The required scope of work to undertake a preliminary contamination assessment of the parcel of land is:

- undertake a site inspection, noting situations that may indicate a potential for contamination, and identify potential environmental sources and/or receptors;
- soil sampling from thirty-two (32) bores positioned at a variety of locations across the site, including locations both inside and outside the shed. The number of sampling locations is approximately 55% of the minimum sampling points required for site characterisation recommended in AS4482.1-2005 for a land area of approximately 46,900m², the bores will be drilled using a drill rig equipped with solid spiral flight augers and/or push tubes;

- soil samples will be collected from each bore at depths of approximately 0.2m, 0.5m and every 0.5m thereafter to 0.5m into natural material. Sampling intervals may be changed onsite according to changes in lithology or strata, including different types of fill, and also if stratification of contaminants was apparent;
- on completion of sampling, the bores will be backfilled to the surface with the drill cuttings and plugged at the surface with concrete;
- selected soil samples will be analysed for combinations of contaminants of potential concern (CoPC) and other soil parameters comprising:
 - metals/metalloids (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury);
 - total recoverable hydrocarbons (TRH);
 - benzene, toluene, ethylbenzene and xylenes (BTEX);
 - polycyclic aromatic hydrocarbons (PAH);
 - organochlorine pesticides (OCP) and organophosphorus pesticides (OPP);
 - polychlorinated biphenyls (PCBs);
 - phenols; and
 - general soil parameters including pH, electrical conductivity (EC), exchangeable cations, effective cation exchange capacity (ECEC); exchangeable sodium percentage (ESP), total nitrogen (TN), total phosphorus (TP), total Kjeldahl nitrogen (TKN), nitrogen dioxide (NO₂), nitrate (NO₃), ammonia (NH₃) and nitrogen oxides (NOx);
- analysis of quality control (QC) samples, including intra- and inter-laboratory replicate samples, one trip blank and one trip spike; and
- preparation of a report that describes the investigation and a Tier 1 assessment of the results against relevant thresholds. Recommendations for future actions would be provided, if required.

1.3 Commission

Butler Partners was commissioned by CBRE to undertake this Preliminary Contamination Assessment outlined in the proposal dated 2 February 2022.

1.4 Technical Framework

In general, this report has been undertaken in accordance with the following documents:

- Australian Standard AS4482.1-2005 Guide to the Sampling and Investigation of Potentially Contaminated Soil – Part 1: Non-volatile and Semi-volatile compounds;
- Australian Standard AS4482.2-1999 Guide to the Sampling and Investigation of Potentially Contaminated Soil – Part 2: Volatile substances;
- Environmental Protection Act 1994 (EP Act);
- Environmental Protection and Other Legislation Amendment Act 2014 (EPOLA Act);
- Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia – May 2009**;
- PFAS National Environmental Management Plan (NEMP 2.0), HEPA January 2020;
- Guideline Assessing a suitably qualified person, DES, Version 2.00, 15 August 2016;
- Guideline Listing and removing land on the land registers, DES, Version 1.02 (ESR/2016/2044);
- National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM);
- Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (QLD); and
- Land Contaminated by Radioactive Material. A Guide to Assessment, Management and Remediation, Queensland Health, January 2020.

SECTION 2 - THE SITE

2.1 Site Identification

The site is described as a portion of Lot 302 on SP257483, a portion of Lot 2 on SP224040 and the entirety of Lot 711 on SL4546 as summarised in Table 1. A recent Nearmap aerial image of the site is provided in Photograph 1, and the site boundaries and property lots are shown in Drawing No. 1 Rev A.

Table 1: Site Summary Information

Real Property Description	Portion of Lot 302 on SP257483	Portion of Lot 2 on SP224040	Lot 711 on SL4546
Lot Area	4.276ha	0.565ha	0.414ha
Site Address	89 MacArthur Avenue, Hamilton		
Total Site Area	5.255ha		
Registered Owner	Economic Development Queensland (EDQ)		
Current Land Use (At the time of investigation)	Industrial Site		
Proposed Land Use	Future Development		
Local Government	Brisbane City Council (BCC)		
BCC Land Zoning	Emerging Community*		

* The purpose of the emerging community zone is to identify land that is intended for an urban purpose in the future, protect land that is identified for an urban purpose in the future from incompatible uses and provide for the timely conversion of non-urban land to land for urban purposes. (<https://cityplan.brisbane.qld.gov.au/eplan/#Rules/484928/40/1/786/0>)



Photograph 1: An aerial image of the understood site boundary (in red). (Source: Nearmap, Image Date: 17 July 2021)

2.2 Site Description

The site is located at 89 MacArthur Avenue, Hamilton and occupies a total site area of approximately 5.255ha with an approximate land area of 4.69ha (the balance being suspended over the Brisbane River). At the time of the investigation, some areas of the site were still in use as part of commercial and/or industrial works. The site consisted of several warehouses and a mixture of asphalted and concreted areas, a number of the warehouses were fenced off and inaccessible. The southern portion of the site was hardstand suspended over the Brisbane River and noted to be constructed on piers. General views of the site are presented in Photograph 2 to Photograph 5.



Photograph 2: Photograph of the site taken from the southwest corner facing northeast.



Photograph 3: Photograph of the northern warehouse taken along the central area of the site towards the east.



Photograph 4: Photograph of the northern warehouse and conveyor belt taken along the central area of the site towards the west.



Photograph 5: Photograph of the portion of the site suspended over the Brisbane River, facing west.

The topography of the site is relatively flat, sloping slightly from the eastern boundary of the site at a level of approximately RL4mAHD, down towards the centre of the site at a level of approximately RL3mAHD.

2.3 Surrounding Land Use and Receptors

The site is located within the BCC municipal area. The surrounding area is generally characterised by mix of industrial areas, emerging low to high-density residential communities and a cruise ship port located to the west along the Brisbane River.

The main sensitive environmental receptor associated with the site is the Brisbane River, part of the southern side comprises hardstand area constructed on piers over the Brisbane River. The Environmental Protection Policy (EPP) Water Type mapping, acquired through QLD Globe, indicates the site and surrounding area is categorised as lowland fresh water. The area of the site over the Brisbane River and the Brisbane River itself is described as Middle Estuary. The Site and the surrounding area is categorised as moderately disturbed by the EPP Management Intent mapping, acquired through QLD Globe, as presented in Figure 1.

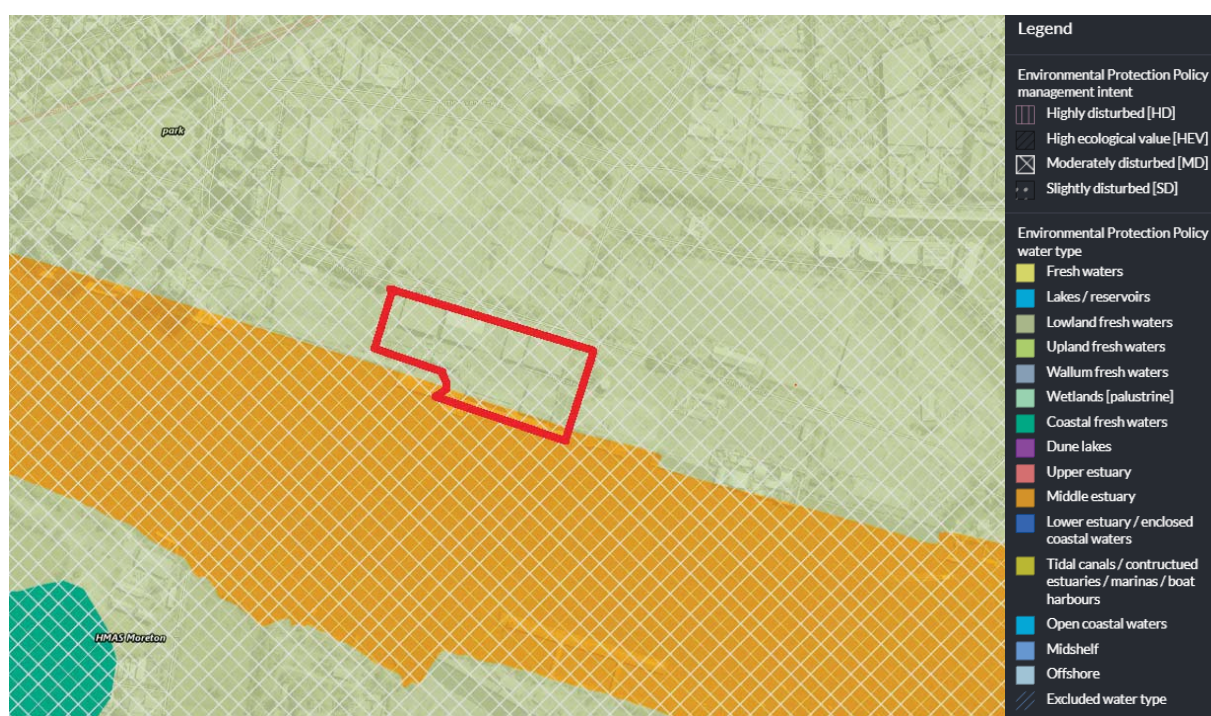


Figure 1: Environmental Protection Policy Management Intent and Water Type Mapping with the approximate site boundary indicated in red (Image Source QLD Globe).

The southern side of the site partly overlays the Brisbane River which is mapped as a 'Category B – Marine Plants'. The Queensland Government Environmentally Sensitive Maps are included in Appendix A.

2.4 Geology

Reference to the Geological Survey of Queensland's 1:31,680 City of Brisbane series sheets (Sheet 3), indicates that the site is mapped in an area of Quaternary alluvium (comprising sand, silt, mud, clay and gravel), underlain by the Tingalpa Formation (comprising carbonaceous shale and lithic sandstone, with minor conglomerate and coal).

2.5 EMR/CLR Search

It is understood that the balance of Lot 302 on SP257483, which is listed on the Department of Environment and Science's Environmental Management Register (EMR) as a result of the amalgamation of three previous property lots:

Lot 783 on SL4449

Lot 1005 on SL6739

Lot 859 on SL4540

All three of these previous property lots were listed on the EMR. Lot 302 on SP257483 is NOT listed on the CLR. In a search conducted on 26 March 2019, Lot 711 on SL4546 was not listed on the EMR or the CLR, Lot 2 on SP224040 is not listed on the EMR or the CLR. The EMR searches are attached in Appendix A.

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SECTION 3 - SITE HISTORY REVIEW

3.1 Aerial Photograph Review

Eleven historical aerial photographs were reviewed using online resources, Q Imagery (<https://qimagery.information.qld.gov.au/>) and Nearmap (<https://www.nearmap.com.au/>) from 1936, 1946, 1951, 1964, 1977, 1986, 1998, 2001, 2009, 2014 and 2022. The observations for each historical aerial photograph of the site are presented below.

1936: The area within the site boundary appears to be undeveloped with a single tree located in the southwest corner of the site. The Brisbane River is located immediately to the south and is partly overlain by the southern portion of the site. A road is visible which runs through the middle of the site in an east west direction with an additional road connecting to a pier on the Brisbane River. The areas to the east and west of the site appear similar to the site and are largely undeveloped with some roads visible. The area north of the site is heavily vegetated and water north of the site is connected to the Brisbane River further east of the aerial photograph. An extract of the 1936 aerial photograph of the site, with an approximate outline of the site boundary marked in red, is presented as Photograph 6.



Photograph 6: Extract of the 1936 aerial photograph with the approximate site boundary marked in red

1946: Much of the northern portion of site and the area to the west has been developed by construction of a number of large industrial warehouses, including the construction of a number of piers along the Brisbane River. In addition to the large warehouses, a number of small buildings have also been constructed on the southern portion of the site. The area to the east of the site also appears to have been developed for industrial purposes. An extract of the 1946 aerial photograph of the site, with an approximate outline of the site boundary marked in red, is presented as Photograph 7.



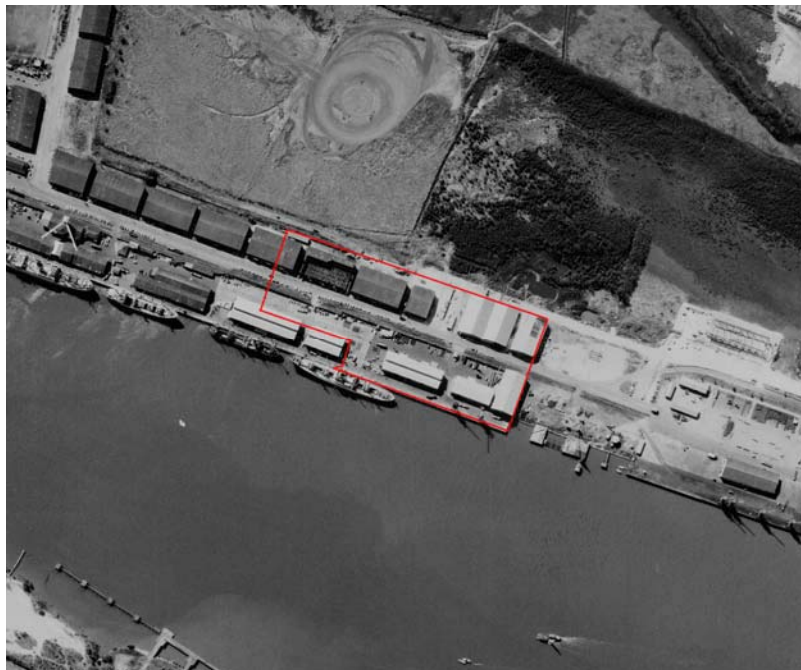
Photograph 7: Extract from the 1946 aerial photograph with the approximate site boundary marked in red

1951: The smaller buildings on the south side of the site appear to have been removed and the southern area of the site is clear of building structures but appears to have storage pads and access tracks. The surrounding area appears similar to the 1946 aerial photograph. An extract of the 1951 aerial photograph of the site, with an approximate outline of the site boundary marked in red, is presented as Photograph 8.



Photograph 8: Extract from the 1951 aerial photograph with the approximate site boundary marked in red

1964: A number of significant changes have occurred both within the site and in the surrounding area since the 1951 photograph. The industrial warehouses located in the northeast corner of the site has been removed and half of the adjacent warehouse has been removed. These warehouses have been replaced by three new warehouse buildings with three new buildings also constructed on the southern portion of the site. An extension of the site has also been undertaken replacing the individual piers extending out into the Brisbane River south of the site with a solid overwater landing area. Two new buildings have been constructed just outside the site boundary in the southwest corner. The area north of the site has been reclaimed from being a branch of the Brisbane River to a vacant flat land area. Further development has been undertaken east of the site. An extract of the 1964 aerial photograph of the site, with an approximate outline of the site boundary marked in red, is presented as Photograph 9.



Photograph 9: Extract from the 1964 aerial photograph with the approximate site boundary marked in red

1977: The industrial warehouses in the northwest corner of the site and further to the west in the surrounding area have all been removed and within the site, have been replaced with new industrial buildings. Most of the area surrounding the site has undergone large-scale industrial development including the area of reclaimed land to the north of the site although the area to the north east remains vacant. The road along the northern boundary of the site has been upgraded. An extract of the 1977 aerial photograph of the site, with an approximate outline of the site boundary marked in red, is presented as Photograph 10.



Photograph 10: Extract from the 1977 aerial photograph with the approximate site boundary marked in red

1986: A number of above ground tanks has replaced the small warehouse located in the centre of the sites northern warehouses. A number of above ground tanks have also been constructed on the previously vacant area to the immediate east of the site, consisting of a large stand-alone tank adjacent to MacArthur Avenue and smaller tanks grouped together. The area to the north east of the site remains vacant and vegetated but with a large stockpile of unknown material. An extract of the 1986 aerial photograph of the site, with an approximate outline of the site boundary marked in red, is presented as Photograph 11.



Photograph 11: Extract of the 1986 aerial photograph with the approximate site boundary marked in red

1998: The tanks constructed within the site along the northern boundary have been removed and additional above ground tanks to the east of the site have been constructed. The area to the north east of the site has been converted from a vacant vegetated area to a large-scale car park. An extract of the 1998 aerial photograph of the site, with an approximate outline of the site boundary marked in red, is presented as Photograph 12.



Photograph 12: Extract of the 1998 aerial photograph with the approximate site boundary marked in red

2001: The site and surrounding area appears similar to the 1998 aerial photograph with the exception of the stockpiled unknown material, which has been removed. An extract of the 2001 aerial photograph of the site, with an approximate outline of the site boundary marked in red, is presented as Photograph 13.



Photograph 13: Extract of the 2001 aerial photograph with the approximate site boundary marked in red

2009: The site appears similar to the 2001 aerial photograph. The two warehouse buildings adjacent to the southern boundary of the site have been removed along with a number of buildings located further west of the site. No vehicles appear to be stored in the area to the north east of the site. An extract of the 2009 aerial photograph of the site, with an approximate outline of the site boundary marked in red, is presented as Photograph 14.



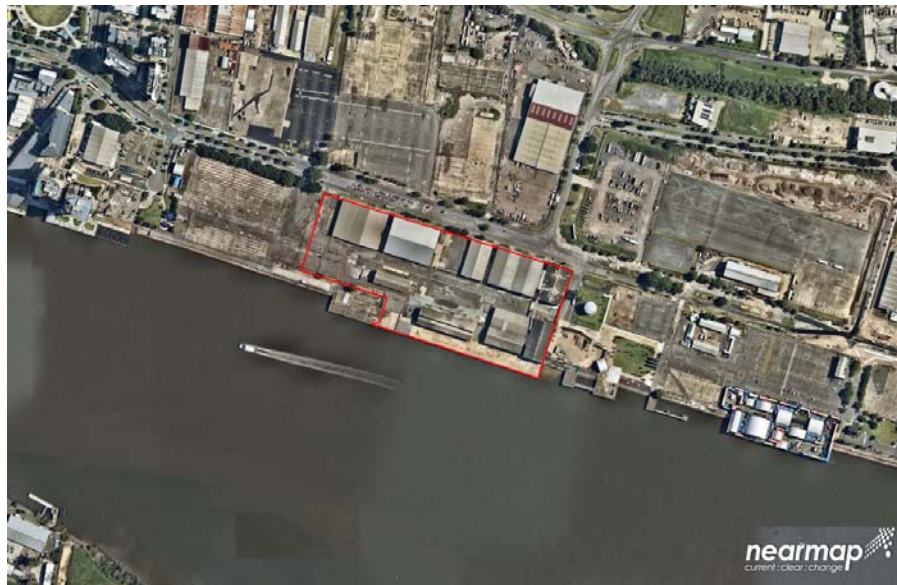
Photograph 14: Extract of the 2009 aerial photograph with the approximate site boundary marked in red

2014: The site appears similar to the 2009 aerial photograph. The surrounding area is mostly unchanged with the exception of a large number of vehicles once again parked in the area to the north-east of the site and the area immediately west of the site is being used for parking associated with the Portside cruise ship terminal. An extract of the 2014 aerial photograph of the site, with an approximate outline of the site boundary marked in red, is presented as Photograph 15.



Photograph 15: Extract of the 2014 aerial photograph with the approximate site boundary marked in red

2022: The site appears similar to the 2014 aerial photograph. Buildings on the areas to the immediate north, east and west of the site have been demolished. The warehouse buildings to the north of the site have been demolished and the area appears vacant. The above ground tanks to the east of the site have been removed with the exception of the large stand-alone acid tank. A section of the suspended wharf over the Brisbane River to the west of the site has also been removed. The areas to the northeast no longer appears to be used for vehicle parking. The carpark to the west of the site remains but is vacant due to Covid-19 travel restrictions preventing cruise shipping operations. An extract of the 2022 aerial photograph of the site, with an approximate outline of the site boundary marked in red, is presented as Photograph 16.



Photograph 16: Extract of the 2022 aerial photograph with the approximate site boundary marked in red

3.1 Site Walkover

A site walkover was undertaken on the 11 April 2022 in order to locate and characterise any surface impacts or areas of concern at the site. A number of potential areas of environmental concern were identified within the site boundary and are described below. The shed labels and potentially environmentally relevant locations within site are presented in Drawing No. 2 Rev A. Photographs of the areas of environmental concern identified onsite are presented in Photograph 17 to Photograph 25.

The first area of environmental concern was the location of a possible former underground fuel storage tank (UST). The size and volume of the identified UST was unable to be ascertained at the time of inspection, it was located in the northeast corner of the site and contained an unknown murky liquid at the time of inspection.



Photograph 17: View of possible former underground fuel storage tank in the northwest corner of the site

An area suspected to have been used as a vehicle wash down bay was noted in the southwest corner of the site. Signage indicating the use as a vehicle wash bay as well as hoses and drains nearby all provide evidence of its historical use.



Photograph 18: View of probable vehicle wash down bay near the southwest corner of the site

A historical transformer was identified in the vicinity of N shed and given the history of the site and likely age of the transformer, potentially environmentally hazardous liquids may have been used in and around the transformer.



Photograph 19: View of historical transformer located at the front of N shed

During the site walkover, a piece of possible Asbestos Containing Material (ACM) was observed. The fragment was noted to most likely be a roof tile from the buildings adjacent to sampling location BH10, as the roofs next to this location appeared dilapidated and severely weathered. This fragment was not tested for asbestos as hazardous materials in the building structures located onsite does not fall within the scope of this investigation.



Photograph 20: View of possible asbestos roof tile, identified at surface near BH10

Located near sampling location BH32, a form of fertiliser material was identified inside of the warehouse. The material was noted to have impacted the surrounding metal which showed signs of discolouration from the results of extended exposure.



Photograph 21: View of fertiliser material identified within N shed

The warehouse identified as the N shed was noted to have faint signing of the previous shed usage at the front of the building. The words 'Bulk Mineral Store' were legible despite the age and fading of the paint, no other indicative signs of historic use of the warehouse was noted. Evidence of fertiliser storage was identified inside the warehouse and was noted to be similar to the material identified near BH32. The type or nature of the storage was not able to be determined.



Photograph 22: View of N shed with faded 'bulk mineral store' sign

The warehouse identified as the L shed was noted to have signage from the previous tenant at the front of the building. Associated Minerals Consolidated Ltd showed no active presence onsite at the time of the site walkover or during investigation works.



Photograph 23: View of L shed with former Associated Minerals Consolidated Ltd company sign still visible

An area presumed to be used as a mineral sand and/or ilmenite loading area was identified in the southern area of the site over the Brisbane River. The loading machine observed is connected to the conveyor system that runs throughout the site. No evidence of mineral sands or ilmenite was identified in the accessible area around the loading zone.



Photograph 24: View of historical mineral sand loading point

Signage indicating the use of K shed as an ilmenite store was noted, along with various safety signs indicating the required use of dust masks during the operation of the conveyor system located within the site.



Photograph 25: View of K shed with signage displaying 'K2 store - ilmenite sand'

A conveyor system was located within the site and was noted to run along the front of sheds J, K, L and M before turning perpendicularly to the towards the Brisbane River. Based on the historical uses identified during the site walkover, it was determined that the conveyor system was used to transport ilmenite and possibly other forms of mineral sand from one end of the site to the other. Evidence of ilmenite was identified underneath the conveyor belt and was more densely consolidated in dilapidated areas of conveyor system where spillage likely occurred.



Photograph 26: View of consolidated mineral sand underneath the conveyor system

Ilmenite was also identified at locations away from the conveyor system running through the site. The identified ilmenite was thoroughly intermixed with other surface material and was noted to be in a thicker layer compared to other areas within the site boundary. This material was identified near the sampling locations BH26 and BH27.



Photograph 27: View of ilmenite intermixed with surface material, near BH27

Lastly, ilmenite was identified buried underneath shallow surface material in the vicinity of BH01. This material was also noted to be of a similar layer thickness to the ilmenite layer identified near BH26 and BH27, compared to other areas of the site.



Photograph 28: View of ilmenite located beneath surface material, near BH1

3.2 Potentially Contaminating Activities

Potentially contaminating activities identified in the limited site history review include:

- historical uncontrolled filling of the site based on earthworks identified during the site walkover and the aerial photograph review;
- former storage of radioactive material (Ilmenite and other Mineral Sands);
- former fertilizer storage facilities;
- former bulk mineral storage facilities;
- former storage of petroleum or oil products;
- probable vehicle wash-down area; and
- demolition waste or debris from industrial building removal and degrading of existing buildings.

Potential contaminants of concern for soil contamination associated with these include:

- heavy metals;
- total recoverable hydrocarbons (TRH) and benzene, toluene, ethyl benzene, xylenes and naphthalene (BTEXN);
- organochlorine pesticides (OCPs);
- polycyclic aromatic hydrocarbons (PAH);
- radiation from radioactive ilmenite;
- Perfluoroalkyl and Polyfluoroalkyl substances (PFAS);
- polychlorinated biphenyls (PCBs); and
- asbestos.

SECTION 4 - INVESTIGATION METHODOLOGY

4.1 Sampling Design and Density

The focus of the preliminary contamination assessment was to identify areas of the site where filling and potentially contaminating activities may have occurred. The drilling and sampling programme was undertaken across the site with the exception of areas over water and the internal areas of inaccessible warehouses. Based on the preliminary nature of the investigation, this investigation was not conducted to a level sufficient to meet AS4482.1 *Guide to the investigation and sampling of sites with potentially contaminated soil – Part 1: Non-volatile and semi-volatile compounds*. Based on the total land area of 4.69ha, the minimum number of sampling investigation locations recommended by AS44882.1 – 2005 is fifty-four.

4.2 Drilling Soil Sampling Methods

The investigation comprised the drilling of thirty-two bores and the surface sampling of three locations, undertaken on 12, 13 and 14 April 2022 across the site. Environmental sampling was undertaken from the thirty-two bores (Bores 1 to 32), with environmental sampling extending to depths up to 5.5m. The bores were drilled with a truck mounted Hydrapower Scout drilling rig using solid flight augers. The solid flight augers were advanced in 0.5m depth increments to ensure certainty in the sample depths and environmental samples were collected from material brought to the surface on the auger flights. Strata identification was based on inspection of materials recovered on the augers, external material was discarded from augured material and samples were taken from the material deemed to be least at risk of cross contamination.

The bores were logged and strata recorded by an experienced environmental scientist. The Environmental Bore Report sheets are presented in Appendix B and the investigation locations are presented in Drawing No. 3 Rev A.

To minimise the potential for cross contamination of samples, each sample was collected using disposable gloves, which were replaced between the collection of each sample. All samples were placed immediately into laboratory prepared jars that were sealed, labelled with a unique identifier and placed into a chilled ice chest. Samples were recorded on a Chain of Custody register, which was used to track the movement of the samples. Samples were stored in a chilled ice chest and were transported to the analytical laboratory for analysis.

4.3 Bore Locations and Supervision

An experienced geo-environmental scientist/engineer set out the bore locations, logged the stratigraphy encountered, directed the insitu sampling and testing program and supervised the fieldwork. Bore locations are indicated approximately on the attached Drawing No. 3 Rev A. The ground surface level at each bore location was approximately interpolated from Brisbane City Council City Plan 2014 – Interactive Mapping contour overlay.

SECTION 5 - SOIL INVESTIGATION RESULTS

5.1 Data Quality Objectives

The data quality objective process, as referenced in the NEPM Amendment No. 1 2013 and presented in Figure 2 of the United States' Environmental Protection Agency (US EPA)'s *Guidance on Systematic Planning Using the Data Quality Objective Process, February 2006*, was used to systematically determine the data quality objectives for the investigation, as presented in Table 2 below.

Table 2: Determination of Data Quality Objectives (DQOs)

Step to determine DQO	DQO
Step 1: State the Problem <i>Define the problem that necessitated the study</i>	The site requires assessment for a feasibility study and at least one of the property lost is listed on DES's. Intrusive investigation across the site to assess possible historical activities and uncontrolled filling was required to determine if the site was contaminated to determine the risk to human and environmental receptors, and determine the current contamination status of the site suitable.
Step 2: Identify the Goal of the Study <i>State how environmental data was used in meeting objectives solving the problem</i>	The goal of the study was to identify whether contamination is present on the site, and to compare the data to NEPM land use criteria to determine the sites feasibility for future developments.
Step 3: Identify Information Inputs <i>Identify data and information needed to answer study questions</i>	Total soil concentrations of contaminants of concern were required to determine the contamination status of the site. If identified, information on the depth and extent of contamination, and whether soil contamination was contained within fill material or extended to natural soil would also be required.
Step 4: Define the Boundaries of the Study <i>Specify the target population and characteristics of interest, define spatial and temporal limits</i>	The physical boundaries of the investigation were based on the site boundaries. The investigation was limited to potential soil contamination based on the site history review, reported industrial operations and use as storage for mineral sands and ilmenite.
Step 5: Develop the Analytical Approach <i>Define the parameter of interest, specify the type of inference and develop the logic for drawing conclusions from findings</i>	Assessment of potential contaminants of concern in soil were based on the site history review and observations made on site. Contaminants analysed included heavy metals, PAH, TRH, BTEXN, OCPs, PCBs, asbestos and radiation. The results of soil concentrations (total concentrations) were compared to assessment criteria presented in Table 3, Table 4, Table 5 and Table 6 which formed the basis of determining the feasibility of the site for future developments
Step 6: Specify Performance or Acceptance Criteria <i>Develop performance criteria for new data being collected or acceptable criteria for existing data being considered for use</i>	Performance criteria and data quality objectives for data collection and laboratory analysis is presented in Section 7.

5.2 Subsurface Conditions

The topography of the site is relatively flat, sloping downward slightly from the eastern boundary of the site of approximately RL4mAHD, towards the centre of the site of approximately RL3mAHD. The subsurface conditions encountered during the fieldwork generally comprised of fill material overlaying natural sand.

The details of the stratigraphy encountered in the bores are detailed further in the Environmental Bore Report sheets presented in Appendix C should be consulted. However, in broad summary, the subsurface conditions encountered generally comprised limited fill material consisting of sands or silty clays to a maximum depth of 3.9m depth, underlain by natural sands.

Free groundwater was observed during drilling ranging from 2.1m below ground level (mbgl) to 3.6mbgl.

5.3 Laboratory Testing

Soil samples were submitted to Australian Laboratory Services (ALS), Eurofins I MGT (Eurofins) HazSure Consultants (HazSure) and RNS laboratories registered by the NATA for the analyses required. Samples were submitted for a combination of analyses, as deemed appropriate based on findings from previous investigations and observations made on site and the site history review. Specifically, soil samples from the current phase of investigation, used to delineate and further characterise previously identified soil contamination, were analysed for a selection of the following:

- heavy metals;
- TRH/BTEXN;
- OCPs;
- PAH;
- radiation;
- PFAS;
- PCBs;
- nutrients; and
- asbestos.

A summary of the results of the laboratory soil analysis are presented in Table 3, Table 4, Table 5, Table 6 and Table 7. Leachate results for the samples analysed are presented in Table 8 and Table 9. Laboratory documentation is presented in Appendix C.

Following the soil analysis, toxicity characteristic leaching procedure (TCLP) and neutral (DI) leaching analysis were conducted on a selection of samples that reported soil exceedances in order to characterise soils for landfill disposal. The leachate results were compared to typical landfill criteria in this report, however, acceptance criteria for lined/unlined disposal is likely to vary depending on the landfill facility.

5.4 Quality Assurance/Quality Control (QA/QC) Methods

The samples were dispatched under a Chain of Custody in order to identify sample movements. The laboratory's internal QA/QC measures included spike analyses, method blanks and duplicates. The laboratory's internal QA/QC results for each batch are included in the attached laboratory reports, provided in Appendix C.

To ensure the integrity of data transfer, the electronic data supplied by the laboratories has been used to develop the results summary tables. Further discussion on QA/QC methods for the investigation phase is presented in Section 7.

5.4.1 Field QA/QC Procedures

Blind (intra-laboratory) and split (inter-laboratory) duplicate samples were collected at a rate of approximately one duplicate for every twenty primary samples analysed. Primary and blind duplicate samples collected during the investigations were submitted to ALS, with split duplicate samples submitted to Eurofins for the requested analyses. The analytical results for each duplicate were compared to the primary sample results and the relative percentage difference (RPD) between the duplicate and primary samples calculated. A full set of RPD calculations are provided in Appendix C, with further discussion provided in Section 7. Samples collected during the investigation were dispatched under Chain of Custody (COC) documentation to ALS and Eurofins in order to identify sample movements.

Disposable sampling equipment was used in the collection of samples, including disposable single use nitrile gloves. Environmental samples from bores were collected from the material brought to the surface on the auger flights at 0.5m depth increments to ensure certainty in the sample depths and to remove external material in order to collect samples from the material deemed to be least at risk of cross contamination.

To ensure the adequacy of storage and transport techniques, one set of a trip blank and trip spike (Trip Blank 032809 and Trip Spike 7) were prepared and kept with the samples during transport and storage from collection through to arrival at the analytical laboratory. The analysis results are presented in Table 4 and indicate that cross contamination of the samples and/or loss of volatile compounds was unlikely to have occurred.

Table 3. Soil Analysis Results- Asbestos, PCBs, OCs and Heavy Metals (Health Investigation Levels and Ecological Investigation Levels)

Sample Date	Sample Duplicate	Sample Number	Sample Depth (m)	Material Type	Asbestos (Presence / Absence)	PAH		Organics (mg/kg)					Pesticides					Inorganics (mg/kg)										
						Total	Naphthalene	Benzo (a) pyrene	Benzo (a) pyrene TEQ	PCB	DDT	Aldrin & Dieldrin	Chlordane	Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	As	Cd	Total Cr	Cu	Pb	Hg ¹	Ni	Zn		
Background Levels																												
						0.85-5	170	0.7 [0.4] ^a	-	-	180	-	-	-	-	-	-	-	-	0.2-3.0	0.04-2	0.5-110	1-190	<2-200	0.001-6.1	2-400	2-180	
NEPEM EIL - Urban Residential and Public Open Space (mg/kg)						-	370	1.4 [1.4] ^a	-	-	640	-	-	-	-	-	-	-	-	160	-	190-405 ^a (190)	60-300 ¹ (190)	11,000 ¹	-	30-500 ¹ (270)	65-960 ¹	70,130 ¹ (400)
NEPEM EIL - Commercial and Industrial (mg/kg)						-	400	3 [1.5] ^a	-	3	1	240	6	50	270	10	6	10	300	100	20	100	6,000	300	400	400	7,400	
NEPEM HIL-A - Low Density Residential (mg/kg)						-	4,000	-	-	40	7	3,600	40	500	2,000	100	50	10	10	2,000	3,000	900	240,000	1,200	1,000	1,000	60,000	60,000
NEPEM HIL-B - High Density Residential (mg/kg)						-	500	-	-	-	5	5	5	5	100	5	5	5	2,000	200	40	240,000	2,000	600	30	600	14,000	
NEPEM HIL-C - Commercial/Industrial (mg/kg)						-	1,000	-	-	50	50	50	50	50	-	50	-	-	-	-	-	-	-	-	-	-	-	-
Landfill Criteria - Unlined (mg/kg)						-	8	0.5	1.2	0.1	0.3	0.1	0.1	0.1	0.15	0.1	0.05	0.2	-	5	1	2	5	5	0.1	2	5	
Landfill Criteria - Maximum (mg/kg)						-	8	0.5	1.2	0.1	0.3	0.1	0.1	0.1	0.15	0.1	0.05	0.2	-	5	1	2	5	5	0.1	2	5	
Laboratory Limit of Reporting (mg/kg)						-	<0.5	<0.5	<0.5	1.2	-	-	-	-	-	-	-	-	-	<5	<1	5	7	6	<0.1	<2	42	
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.5	<0.5	68	34	13	<0.1	77	86
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8	7	7	<0.1	4	7
14/04/2022						Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	8					

Table 4: Soil Analytical Results – TRH and BTEXN (Health Investigation Levels and Ecological Investigation Levels)

Sample Date		Sample Duplicate	Sample Number	Sample Depth (m)	Material Type	Organics (mg/kg)							BTEXN				
						TCH											
						C ₈ -C ₁₀ minus BTEX (F1)	C ₉ -C ₁₀	>C ₁₀ -C ₁₄ minus naphthalene (F2)	>C ₁₀ -C ₁₆	>C ₁₄ -C ₂₄	>C ₁₄ -C ₂₆	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	
Soil Saturation Concentration (Cat) - Sand Silt Clay						950 910 850	950 910 850	560 570 560	560 570 560	-	-	360 440 430	560 640 630	64 69 68	300 330 330	9 10 10	
ESL (Urban Residential & Public Open Space) - Coarse Fine						180 180	-	-	120 120	300 1,300	2,800 5,600	50 65	65 105	70 125	105 45	170 ^A	
ESL (Commercial/Industrial) - Coarse Fine						215 215	-	-	170 170	1,700 2,500	3,300 6,600	75 95	135 135	165 185	180 95	370 ^A	
Management Limit (Residential, parkland & public open space) - Coarse Soil Fine Soil						-	700 800	-	1,000 1,000	2,500 3,500	10,000 10,000	-	-	-	-	-	
Management Limit (Commercial & Industrial) - Coarse Soil Fine Soil						-	700 800	-	1,000 1,000	3,500 5,000	10,000 10,000	-	-	-	-	-	
HSL-A & HSL-B (Low - High Density Residential) Vapour Intrusion - 0m to <1m - Sand Silt Clay						45 40 50	-	110 230 280	-	-	0.5 0.6 0.7	160 390 480	55 NL NL	40 95 110	3 4 5		
HSL-A & HSL-B (Low - High Density Residential) Vapour Intrusion - 1m to <2m - Sand Silt Clay						70 65 90	-	240 NL NL	-	-	0.5 0.7 1	220 NL NL	NL NL NL	60 210 370	NL NL NL		
HSL-A & HSL-B (Low - High Density Residential) Vapour Intrusion - 2m to <4m - Sand Silt Clay						110 100 150	-	440 NL NL	-	-	0.5 1 2	310 NL NL	NL NL NL	95 NL NL	NL NL NL		
HSL-A & HSL-B (Low - High Density Residential) Vapour Intrusion - 4m + - Sand Silt Clay						200 190 290	-	NL NL NL	-	-	0.5 2 3	540 NL NL	NL NL NL	170 NL NL	NL NL NL		
HSL-D (Commercial/Industrial) Vapour Intrusion - 0m to <1m - Sand Silt Clay						260 250 310	-	NL NL NL	-	-	3 14 4	310 NL NL	NL NL NL	230 NL NL	NL NL NL		
HSL-D (Commercial/Industrial) Vapour Intrusion - 1m to <2m - Sand Silt Clay						370 360 480	-	NL NL NL	-	-	3 14 6	NL NL NL	NL NL NL	NL NL NL	NL NL NL		
HSL-D (Commercial/Industrial) Vapour Intrusion - 2m to <4m - Sand Silt Clay						630 590 NL	-	NL NL NL	-	-	3 16 9	NL NL NL	NL NL NL	NL NL NL	NL NL NL		
HSL-D (Commercial/Industrial) Vapour Intrusion - 4m + - Sand Silt Clay						NL NL NL	-	NL NL NL	-	-	3 10 20	NL NL NL	NL NL NL	NL NL NL	NL NL NL		
Adopted Clean Fill Criteria						40	700	110	120	300	2,800	0.5	85	55	40	3	
Landfill Criteria - Unlined (mg/kg)						-	500*	-	5,000*	10,000*	10,000*	10	500	300	250	-	
Landfill Criteria - Maximum (mg/kg)						-	1,000*	-	10,000*	50,000*	10,000*	20	1,000	600	500	-	
Laboratory Limit of Reporting (mg/kg)						10	10	50	50	100	100	0.2	0.5	0.5	1.0	1	
12/04/2022	-	-	BH03-1	0.02-0.2	Fill	<10	<10	<50	<50	230	<100	<0.2	<0.5	<0.5	<1	<1	
12/04/2022	-	-	BH04-2	0.4-0.5	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
12/04/2022	-	-	BH06-1	0.17-0.25	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
12/04/2022	-	-	BH07-1	0.02-0.2	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
12/04/2022	-	-	BH11-1	0.25-0.5	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
12/04/2022	-	-	BH13-1	0.02-0.025	Fill	<10	<10	<50	<50	180	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH14-3	0.8-1.0	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH15-1	0.02-0.3	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH15-2	0.4-0.5	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH16-1	0.02-0.25	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH17-2	0.3-0.5	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH18-1	0.02-0.25	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH18-3	0.8-1.0	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH18-4	1.3-1.5	Fill	<10	<10	<50	<50	110	120	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH19-2	0.3-0.5	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH19-5	1.8-2.0	Fill	<10	<10	<50	<50	120	170	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH20-3	0.8-1.0	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH22-2	0.4-0.5	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH23-2	0.3-0.5	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH24-3	0.8-1.0	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
13/04/2022	-	-	BH24-4	1.3-1.5	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
14/04/2022	-	-	BH25-2	0.3-0.5	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
14/04/2022	-	-	BH27-1	0.05-0.25	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
14/04/2022	-	-	BH28-1	0.02-0.25	Fill	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<1	<1	
OC Water Samples																	
12/04/2022	-	-	ALS Control Spike	62	-	37	62	-	-	-	-	0.9	9.6	2	12.4	<1	
12/04/2022	-	-	Trip Spike 7	63	-	38	63	-	-	-	-	0.9	9.7	2	12.4	<1	
13/04/2022	-	-	Trip Blank 032809	<10	-	<10	<10	-	-	-	-	<0.2	<0.5	<0.5	<1	<1	

Not analysed

Table 5: Soil Analytical Results (Nutrients and Physico-Chemical Parameters)

Sample Date	Sample Number	Sample Depth (m)	Material Type	pH Value	Exchangeable Acidity (meq/100g)	Electrical Conductivity (µS/cm)	Cation Exchange Capacity (CEC) (meq/100g)	Ammonia as N (mg/kg)	Nitrite + Nitrate as N (Sol.) (mg/kg)	Total Kjeldahl Nitrogen as N (mg/kg)	Total Nitrogen as N (mg/kg)	Total Phosphorus as P (mg/kg)
Laboratory Limit of Reporting (mg/kg)				0 - 14	0.1	1	0.2	20.0	0.1	20	20	2
13/04/2022	BH23-1	0.02-0.25	Fill	9.4	-	75	14.3	<20	1	20	20	314
14/04/2022	BH29-1	0.15-0.25	Fill	8.7	-	189	1.1	<20	43.8	120	160	168
14/04/2022	BH31-1	0.15-0.25	Fill	4	2.9	1180	4.4	<20	15.2	310	320	416
14/04/2022	BH32-2	0.4-0.5	Fill	8.8	-	580	1.5	<20	<0.1	120	120	230

NOTES: Analyte exceeds the generic EIL Guideline Criteria for Urban Residential and Public Open Space or Commercial and Industrial Land Use

Analyte exceeds the HIL-A Guideline Criteria

Analyte exceeds the HIL-B Guideline Criteria

Analyte exceeds the HIL-D Guideline Criteria

Adopted Clean Fill Criteria for unrestricted use of soils

Inorganic Mercury

Criteria for Cr (VI)

Criteria for Cr (III)

Ecological Screening Levels (ESLs) for benzo(a)pyrene for coarse / fine soils

Generic Added Contaminant Level (ACL), ranges provided for ACLs dependent on physicochemical properties

Adopted ACL based on typical physicochemical properties of soils in South-East Queensland

Zero detection adopted as a suitable qualitative criteria for unrestricted use of soil materials

No asbestos detected (NAD), organic fibres detected (OF)

Not analysed

Table 6: Soil Analytical Results – PFAS (Health Investigation Levels and Ecological Investigation Levels)

Sample Date	Sample Duplicate	Sample Number	Sample Depth (m)	Material Type	Perfluoroalkyl and polyfluoroalkyl substances (PFAS) (mg/kg)		
					Sum of Perfluorooctane sulfonic acid and Perfluorohexane sulfonic acid (PFOS + PFHxS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorooctanoic acid (PFOA)
NEMP 2.0 Soil - Ecological Indirect Exposure All Land Uses					-	0.01	-
NEMP 2.0 Soil - Ecological Indirect Exposure Industrial/Commercial ^					-	0.14^	-
NEMP 2.0 HIL-A - Residential with garden/accessible soil (mg/kg)					0.01	-	0.1
NEMP 2.0 HIL-B - Residential with minimal opportunities for soil access (mg/kg)					2	-	20
NEMP 2.0 HIL-C - Public Open Space (mg/kg)					1	-	10
NEMP 2.0 HIL-D - Industrial/Commercial (mg/kg)					20	-	50
Laboratory Limit of Reporting (mg/kg)					0.0002	0.0002	0.0002
12/04/2022	-	BH01-1	0.0-0.15	Fill	0.0004	0.0004	<0.0002
12/04/2022	-	BH03-1	0.02-0.2	Fill	0.0010	0.0010	<0.0002
13/04/2022	-	BH17-1	0.02-0.25	Fill	<0.0002	<0.0002	<0.0002
13/04/2022	-	BH20-1	0.02-0.25	Fill	<0.0002	<0.0002	<0.0002
13/04/2022	-	BH22-3	0.8-0.1	Fill	<0.0002	<0.0002	<0.0002
14/04/2022	-	BH26-1	0.1-0.3	Fill	0.0002	0.0002	<0.0002
14/04/2022	-	BH30-2	0.3-0.5	Fill	<0.0002	<0.0002	<0.0002

NOTES:

- 1 Analyte exceeds the NEMP 2.0 Ecological Indirect Exposure Guideline Criteria
- 1 Analyte exceeds the NEMP 2.0 HIL-A Guideline Criteria
- 1 Analyte exceeds the NEMP 2.0 HIL-B Guideline Criteria
- 1 Analyte exceeds the NEMP 2.0 HIL-C Guideline Criteria
- 1 Analyte exceeds the NEMP 2.0 HIL-D Guideline Criteria
- ^ For intensively developed sites with no secondary consumers and minimal potential for indirect ecological exposure, a higher criterion of up to 0.14 mg/kg may be appropriate
- Not analysed

Table 7: Soil Analytical Results – Radionuclide Isotopes

Sample Date	Sample Duplicate	Sample Number	Sample Depth (m)	Material Type	Radionuclide Isotopes (Bq/kg)		
					Uranium (U238)	Thorium (Th232)	Potassium 40 (K40)
Queensland Average Concentration Values for NORM Radionuclides					30±28	37±18	310±186
Laboratory Minimum Detection Level (Bq/kg)					15	15	15
12-Apr-22	-	SS01	Surface	soil	410±40	140±20	180±30
14-Apr-22	-	SS02	Surface	soil	360±30	170±20	<15
14-Apr-22	-	SS03	Surface	soil	71±7	110±20	10±20
14-Apr-22	-	BH27-2	0.3-0.5	soil	120±10	50±9	60±20
NOTES:							
1		Analyte exceeds the Queensland average concentration values for NORM radionuclides (Bq/kg)					
-		Not analysed					

Table 8: Leachability Results for Soils (Arsenic and TPH)

Sample Date	Sample Duplicate	Sample Number	Sample Depth	Material Type	Inorganics (mg/L)										Organics (mg/L)						Total TPH		
					As			C10-C14			C15-C28			C29-C36			Total Concentration (mg/kg)	DI Leach	TCLP	Total Concentration (mg/kg)	DI Leach	TCLP	Total Concentration (mg/kg)
					DI Leach	TCLP	Total Concentration (mg/kg)	DI Leach	TCLP	Total Concentration (mg/kg)	DI Leach	TCLP	Total Concentration (mg/kg)	DI Leach	TCLP	Total Concentration (mg/kg)							
Adopted Clean Fill Criteria (mg/kg)					-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Landfill Criteria - Unlined (mg/L)					0.5	0.5	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	
Landfill Criteria - Maximum (mg/L)					5.0	5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	
Laboratory Limit of Reporting (mg/L)					0.01	0.01	5	0.05	0.05	50	0.1	0.1	100	0.05	0.05	100	0.05	0.05	100	0.05	0.05	50	
12/04/2022		BH03-1	0.02-0.2	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12/04/2022		BH03-2	0.3-0.5	Fill	0.3	<0.1	140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13/04/2022		BH19-5	1.8-2.0	Fill	-	-	-	<0.05	0.06	<50	<0.1	<0.1	<100	<0.05	<0.05	120	<0.05	<0.05	120	<0.05	0.06	120	

Table 9: Leachability Results for Soils (PFAS)

Sample Date	Sample Duplicate	Sample Number	Sample Depth	Material Type	Inorganics (mg/L)											
					Sum of PFOS + PFHxS			PFOS			PFOA					
					DI Leach	TCLP	Total Concentration (mg/kg)	DI Leach	TCLP	Total Concentration (mg/kg)	DI Leach	TCLP	Total Concentration (mg/kg)			
					-	-	0.01	-	-	0.01	-	-	-	-	0.01	
Adopted Clean Fill Criteria (mg/kg)					-	-	-	-	-	-	-	-	-	-	-	
Landfill Criteria - Unlined (mg/L)					-	-	-	-	-	-	-	-	-	-	-	
Landfill Criteria - Maximum (mg/L)					-	-	-	-	-	-	-	-	-	-	-	
Laboratory Limit of Reporting (mg/L)					0.00001	0.00001	0.0002	0.00002	0.00002	0.0002	0.00001	0.00001	0.00001	0.0002	0.0002	
12/04/2022		BH03-1	0.02-0.2	Fill	<0.00001	<0.00001	0.0010	<0.00002	<0.00002	0.0010	<0.00001	<0.00001	<0.00001	<0.0002	<0.0002	
12/04/2022		BH03-2	0.3-0.5	Fill	-	-	-	-	-	-	-	-	-	-	-	
13/04/2022		BH19-5	1.8-2.0	Fill	-	-	-	-	-	-	-	-	-	-	-	

SECTION 6 - ENVIRONMENTAL DISCUSSION

6.1 Contaminated Land- Potential Contamination Sources

Based on the site history review and site inspection, the following potentially contaminating activities have been identified:

- historical uncontrolled filling of the site based on earthworks identified during the site walkover and the aerial photograph review;
- former storage of radioactive material;
- former fertilizer storage facilities;
- former bulk mineral storage facilities;
- former storage of petroleum or oil products;
- probable vehicle wash-down area; and
- demolition waste or debris from industrial building removal.

Based on these observations soil samples were analysed for the following contaminants of concern including:

- heavy metals;
- TRH/BTEXN;
- OCPs;
- PAH;
- radiation;
- PFAS;
- PCBs;
- nutrients; and
- asbestos.

6.2 Soil Contamination Assessment Criteria

To assess the suitability of the site for its current and proposed use, soil assessment criteria were required for heavy metals, TRH/BTEXN, PAH, pesticides, radiation and asbestos. Assessment of potential contamination has been undertaken in terms of environmental risk and risk to human health and is based on NEPM Amendment No 1. 2013.

Investigation levels for contaminants are presented in the NEPM for a range of categories:

- *Background levels* provide levels of contaminants which would be expected to occur naturally in soils in Australia;
- *Ecological Investigation Levels* (EILs) are levels below which contaminants in soils are not considered to adversely impact terrestrial ecosystems. EILs are divided into three land use scenarios derived for specified levels of percentage species protection;
- *Ecological Screening Levels* (ESLs) are levels below which petroleum hydrocarbon contaminants in soils are not considered to adversely impact terrestrial ecosystems. ESLs are divided into three land use scenarios derived for specified levels of percentage species protection;

- *Health-based Investigation Levels* (HILs) are levels below which contaminants in soils are not considered to adversely impact human health. HILs are divided into four exposure settings depending upon proposed land-use type. Exposure settings include residential with garden/accessible soil (i.e. low density residential, primary schools and childcare centres), residential with minimal soil access (i.e. high density residential), public open space (i.e. parks and secondary schools) and commercial/industrial (i.e. offices/shops, factories and industrial sites);
- *Health Screening Levels* (HSLs) are levels determined to be the reasonable maximum exposure for the protection of human health in consideration of the dominant vapour inhalation exposure pathway for petroleum hydrocarbons. HSLs are divided into three exposure settings depending upon proposed land-use type. Exposure settings include residential (low to high density), recreational/public open space and commercial/industrial. It should be noted that where the calculated HSL is greater than the soil saturation concentration (C_{sat}), soil vapour cannot result in an unacceptable vapour risk, hence no HSL is provided for this scenario and the HSL is denoted as not limiting ('NL'); and
- *Management Limits* (MLs) are levels, which take into consideration potential effects cause by aesthetics, the presence of free phase hydrocarbon product and potential effects on buried infrastructure and explosive/fire risks.

Concentrations of contaminant have been compared to adopted clean fill criteria and the HILs for commercial/industrial (HIL-D) based on the proposed land use. The adopted clean fill criteria is established based on potential risk to human health (HIL-A and HSL-A) and the environment (EILs and ESLs) assuming sensitive onsite land uses and to determine if the soil would be appropriate for unrestricted offsite disposal or reuse.

Assessment of asbestos in soil is also based on the NEPM (2013), which was adapted from the Western Australian Guidelines for the *Assessment, Remediation and Management of Asbestos – Contamination Sites in Western Australia*, May 2009 (WA Guidelines). For the purpose of initial assessment, zero detection has been adopted as suitable qualitative criteria for unrestricted use of soil materials.

Polarised light microscopy, including dispersion staining techniques used to identify asbestos are qualitative methods, which allow classification of materials as either containing asbestos or not containing asbestos. Asbestos is a generic term for a number of fibrous silicate minerals. The common forms of asbestos include:

- Chrysotile (white asbestos) – most abundant;
- Amosite (brown or grey asbestos); and
- Crocidolite (blue asbestos).

No NEPM criteria exists for radioactive material, as such all reference to radioactive contamination is based on guidance given by QLD Health and compared against the Queensland average concentration values for NORM radionuclides.

Clean fill must also comply with Section 3.6 of Schedule B1 of the NEPM, which states that soils should not be discoloured, malodorous, contain putrescible refuse nor be of abnormal consistency. Any soils to be classified as clean fill and suitable for unrestricted transport offsite would need to satisfy the aesthetic criteria.

6.3 Comparison of Results to Assessment Criteria

In total, one hundred and thirteen samples were collected and variously analysed, including the six sets of duplicates. The results of the laboratory analyses have been compared with the adopted clean fill criteria and the NEPM criteria for low-density residential, high density residential, commercial and industrial land use, with the results summarised below.

6.3.1 Heavy Metals

- Cadmium (Cd), Total Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni) and Zinc (Zn) – all one hundred and four samples analysed, including the six sets of duplicates, returned concentrations less than the adopted clean fill criteria; and
- Arsenic (As) – one (BH03-2) of the one hundred and four samples analysed reported a concentration greater than the adopted clean fill and HIL-A criteria but less than the HIL-B and HIL-D criteria.

6.3.2 PAH

All twenty-nine samples analysed reported concentrations of PAH compounds less than the adopted clean fill criteria.

6.3.3 TRH

- C₆-C₁₀ minus BTEX, C₆-C₁₀, >C₁₀-C₁₆ minus naphthalene (F2), >C₁₀-C₁₆ and >C₃₄-C₄₀ - all twenty-five samples analysed reported concentrations below the laboratory's limit of reporting (LOR);
- >C₁₆-C₃₄ – four samples (BH03-1, BH14-3, BH18-4 and BH19-5) of the twenty-five samples analysed reported concentrations greater than the laboratory's LOR but less than the adopted clean fill criterion; and
- >C₃₄-C₄₀ – two samples (BH18-4 and BH19-5) of the twenty-five samples analysed reported concentrations greater than the laboratory's LOR but less than the adopted clean fill criterion.

6.3.4 BTEXN

All twenty-five samples analysed for all BTEXN compounds reported concentrations less than the laboratory's LOR.

6.3.5 OCPs

All twenty-one samples analysed for all OCP compounds reported concentrations less than the laboratory's LOR.

6.3.6 PCBs

One sample analysed for PCBs reported a concentration less than the laboratory's LOR.

6.3.7 Asbestos

Fifteen samples were analysed for the presence/absence of asbestos fragments or fibres, the results confirmed no asbestos detected (NAD) in any of the fifteen samples analysed.

6.3.8 Nutrients

- pH value – sample analysis reported BH23-1 at 9.4, BH29-1 at 8.7, BH31-1 at 4 and BH32-2 at 8.8
- Exchangeable Acidity – sample analysis reported BH31-1 at 2.9meq/100g;
- Electrical Conductivity – sample analysis reported BH23-1 at 75 μ S/cm, BH29-1 at 189 μ S/cm, BH31-1 at 1180 μ S/cm and BH32-2 at 580 μ S/cm;
- Cation Exchange Capacity – sample analysis reported BH23-1 at 14.3 meq/100g, BH29-1 at 1.1 meq/100g, BH31-1 at 4.4 meq/100g and BH32-2 at 1.5meq/100g;
- Ammonia as N – sample analysis reported all four samples below the laboratories LOR;
- Nitrite + Nitrate as N (Sol.) – sample analysis reported BH23-1 at 1 mg/kg, BH29-1 at 43.8 mg/kg, BH31-1 at 15.2 mg/kg and BH32-2 at <0.1mg/kg;
- Total Kjeldahl Nitrogen as N – sample analysis reported BH23-1 at 20 mg/kg, BH29-1 at 120 mg/kg, BH31-1 at 310 mg/kg and BH32-2 at 120mg/kg;
- Total Nitrogen as N – sample analysis reported BH23-1 at 20 mg/kg, BH29-1 at 160 mg/kg, BH31-1 at 320 mg/kg and BH32-2 at 120mg/kg; and
- Total Phosphorus as P – sample analysis reported BH23-1 at 314 mg/kg, BH29-1 at 168 mg/kg, BH31-1 at 416 mg/kg and BH32-2 at 230mg/kg

6.3.9 Radioactive Ilmenite

Four ilmenite sand samples were submitted to QLD Health to be analysed for the presence of radioactive material using Gamma Spectrometry analysis. Three (SS01, SS03 and BH27-2) of the four samples analysed reported concentrations of all radionuclide isotopes above the minimum detectable level (MDL) and one (SS02) sample reported concentrations of all radionuclide isotopes above the MDL with the exception of Potassium 40 (K40) that reported concentrations below the MDL level.

All four samples reported radionuclide isotopes concentrations for Uranium and Thorium above the Queensland average concentration values for naturally occurring radioactive material (NORM).

6.3.10 Leachate Analysis

Leachate analysis on three samples (BH03-1, BH03-2 and Bh19-5) were submitted for TCLP and DI leach to assess the potential for contaminants to leach under both likely landfill scenarios and natural conditions, respectively. Samples were leached and analysed for selected As, TPH and PFAS based on total concentration results.

One sample (BH03-2) reported a total concentration of Arsenic above the typical unlined landfill criteria, however, all samples reported leachate concentrations under acidic and neutral conditions less than the typical unlined landfill criteria.

If radioactive ilmenite sand is to be disposed offsite, it is recommended leachate analysis be undertaken before this material is removed from the site.

5.3.1 Aesthetic Observations

Evidence of construction and demolition (C&D) waste was encountered in a number of bores, traces of timber, concrete, asphalt and brick fragments were identified in bores BH03, BH04, BH11, BH15, BH19, BH20, BH24 and BH30. Potentially radioactive mineral sand (ilmenite) was encountered below the ground surface level in bores BH01 and BH27. Bores BH03, BH14 and BH15 also reported ash within fill material buried on site. Odorous material was also encountered in two bore locations, BH18 and BH24, during the investigation and were noted to have hydrocarbon odours at depth within fill material.

Detailed observations encountered in the bores are presented in the Environmental Bore Report sheets in Appendix B. If soil displaying aesthetic issues is to be excavated and disposed off-site, it will need to be managed to ensure that it complies with Section 3.6 of Schedule B of the NEPM.

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6.4 Discussion of Results

Based on the results of the investigation there were no exceedances of concentrations of PAH compounds, TRH/BTEXN, OCPs, PCBS or asbestos against the adopted clean fill criteria. However, a single concentration of Arsenic in soil was identified in excess of the adopted clean fill. The presence of C&D waste, including concrete and brick fragments was identified in a number of locations. Based on the observations of C&D waste and the use of boreholes for the investigation, the absence of asbestos cannot not be confidently confirmed.

Ilmenite sand that was observed across the surface of the site and at depth in BH27 was confirmed to be radioactive with concentrations of radionuclide isotopes uranium and thorium exceeding the Queensland average concentration values for NORM radionuclides. The identified soil exceedance is shown on Drawing No. 4 Rev B.

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SECTION 7 - QA/QC REVIEW

The samples were dispatched under Chain of Custody (COC) documentation provided in Appendix C (soil laboratory documentation), in order to identify sample movements. To ensure the integrity of data transfer the electronic data supplied by the laboratory has been used to develop the results summary tables.

Data quality is assessed with respect to completeness, accuracy, precision, sensitivity, laboratory blanks, holding times, field duplicates and representativeness. The QA parameters are discussed below as indicators of data quality.

7.1 Completeness

The following information is required to check for completeness of data sets:

- CoC forms (signed by the analytical laboratory);
- sample receipt forms;
- all sample results reported;
- all blank data reported;
- all lab duplicates reported and relative percent differences (RPDs) calculated;
- all surrogate spike data reported;
- all matrix spike and matrix spike duplicate (MS/MSD) data reported and RPDs calculated; and
- NATA stamp on reports.

The results of this check indicated that required documentation and data has been reported on NATA approved reports.

7.2 Accuracy

Accuracy is a measure of the agreement between an experimental determination and the true value of the parameter being measured. The determination of accuracy can be achieved through the analysis of known reference materials or assessed by the analysis of matrix spikes. Spiking of reference materials into an actual sample matrix is the preferred technique because it provides a measure of the matrix effects on the analytical accuracy. Accuracy is measured in terms of percentage recovery as defined by the following equation:

$$\%R = \frac{SSR - SR}{SA} \times 100$$

where:

%R	= percentage recovery of the spike
SSR	= spiked sample result
SR	= sample result (native)
SA	= spike added

Laboratory personnel calculate percentage recoveries of spiked compounds, which are evaluated against control or acceptance limits taken from the appropriate NATA approved method. If the spike recovery for a sample does not fall within the prescribed control limits, laboratory based corrective action is taken, although the sample is not necessarily reanalysed.

Surrogate spikes consist of spiking non-target compounds into the sample prior to analysis. The spiked compounds are expected to behave during analysis in the same way as the target compounds. Every sample is spiked prior to extraction or analysis with surrogate compounds that are representative of the

analysis. If surrogate spike recovery does not meet the prescribed control limits, samples are generally reanalysed.

Matrix spikes and MS/MSDs are analysed at a frequency of one in ten samples or one per analytical batch, whichever is more frequent. MS/MSDs are analysed by splitting a field sample. Each portion is spiked with known quantities of the target compound in order to ascertain the effects of the specific sample matrix on the recovery of analytes.

The sample batch may contain samples from other sources. Therefore, MS/MSDs may be analysed on other samples from the batch or on a 'clean' matrix (e.g. distilled water). However, the laboratory's QA/QC procedures require all batch MS/MSDs to conform to the prescribed criteria. The laboratory may report this analysis as laboratory control samples, which may be used to assess the laboratory's methods and procedures.

According to guidelines, sample results are qualified when a matrix spike recovery is below or above the QA acceptance criteria. Typically, results are qualified when percentage recovery is below QA acceptance criteria, indicating that sample results may be biased low. However, results are also qualified when percentage recovery is above QA acceptance criteria, indicating that sample results may be biased high.

Laboratory control spike recovery for samples (lab no.) QC-MRG2-42934860 (Hg) was greater than the upper control limit, indicating the sample results may be biased high.

Matrix spike recovery for sample (lab no.) EB2210636-002 (Cr and Pb) recovery less than lower data quality objective, indicating that sample results may be biased low.

Matrix spike recoveries for samples EB2208345--002 (C_{18} - C_{34} fraction), EB2210677-002 (DEF), EB2210677-048 (DEF) and EB2210677-078 (DEF) recovery greater than upper data quality objective, indicating that sample results may be biased high.

Matrix spike recoveries for samples (lab no.) EB2210972-048 (Nitrite + Nitrate as N - (Sol.) and EB2210971--002 (C_{10} - C_{14} fraction, C_{15} - C_{28} fraction, $>C_{10}$ - C_{16} fraction $>C_{16}$ - C_{34} fraction) MS recovery not determined, background level greater than or equal to 4x spike level.

7.3 Precision

Precision is a measure of the ability to reproduce results, and is assessed on the basis of agreement between a set of replicate results obtained from duplicate analyses. The precision of a duplicate determination can be measured as RPD, and is calculated from the following equation:

$$RPD = \left[\frac{X1 - X2}{\left(\frac{X1 + X2}{2} \right)} \right] \times 100$$

where:

X1 is the first duplicate value

X2 is the second duplicate value

Laboratory personnel calculate the RPDs of laboratory duplicates and MS/MSDs. Control or acceptance limits are taken from the appropriate method. If the RPD for a sample does not fall within the control limits, laboratory based corrective action is taken; however, the sample is not necessarily reanalysed.

Samples (lab no.) EB2210676-050 (Zn), EB2210677-003 (Cr), EB2210677-044 (Ni), EB2210342-007 (Fluoranthene) and EB2210664-001 (Total Kjeldahl Nitrogen - as N) recorded RPDs exceeding the LOR based limits.

As a laboratory batch may contain samples from other sources, laboratory duplicates and MS/MSDs may be analysed on other samples from the batch. However, the laboratory's QA/QC procedures require all batch laboratory duplicates and MS/MSDs to conform to prescribed criteria.

7.4 Sensitivity

Sensitivity criteria are used to monitor achievement of quantification using method detection limits. Method detection limits depend on the method of analysis, the instrument's ability to measure analytes and the sample matrix; in particular, background interferences.

When interferences are present in the sample, a loss of sensitivity can occur resulting in an increase in the method detection limit. In some instances (e.g. where one or more compounds have particularly high concentrations), the sample must be diluted for analysis. This increases the method detection limit by the dilution factor.

Method detection limits for soil/sediments are based on 'wet weight'. Actual detection limits are calculated on a 'dry weight' basis and are higher. The detection limits achieved by the laboratory were below the site criteria for all analytes.

7.5 Laboratory Blanks

Laboratory blanks monitor externally introduced contaminants that potentially derive from glassware, cleaning reagents and digestion reagents during the analysis process. The blank consists of water and digestion reagents prepared in the laboratory. The laboratory blank is treated as a sample in the laboratory, going through the same sample preparation and analysis procedures as corresponding samples.

To meet the QC acceptance criteria the laboratory blanks should have no detectable concentrations of the target compounds. The laboratory blank results are presented in the laboratory analytical reports. All laboratory blank results were reported within prescribed acceptance criteria.

7.6 Holding Times

Holding times from field sampling to laboratory analysis must be minimised to ensure the representativeness of the result obtained. Delays between sampling and analysis can lead to analytes changing due to processes such as volatilisation, mineralisation, and biological modification.

Where standard holding times are exceeded, professional judgement as to the integrity of the data will be required, taking into account such factors as field storage, laboratory storage and even sample bottle characteristics.

Four samples (BH23-1, BH29-1, BH31-1 and BH32-2) were reported to breach the laboratories recommended extraction times for Total Phosphorus as P however these samples did not breach the analysis holding times. No other samples were reported to breach the laboratories recommended holding times for all other analytes tested.

7.7 Field Duplicates

Blind and split duplicate samples were collected and the three samples (i.e. primary sample and blind and split duplicates) were submitted for analysis for the contaminants of concern. A data quality objective (DQO) of a rate of one pair of blind (intra-laboratory) and split (inter-laboratory) duplicate samples for twenty primary

samples is generally considered acceptable. In total, six sets of blind and split duplicate soil samples were collected and analysed for a total of one hundred and one samples collected, which is above the required DQO rate. One set of blind and split duplicate samples were collected and analysed for one primary groundwater sample.

The analytical results for the duplicates were compared to the primary sample results using RPD calculations in accordance with the methodology outlined in Section 7.3. The RPD is defined as the absolute difference between two values, divided by their mean values and expressed as a percentage. Where the primary or duplicate sample reported concentrations below the laboratory's LOR, the RPD was not calculated. An RPD value below 50% is considered an acceptable data quality objective (DQO).

A full set of RPD calculations for each phase of work are presented in Appendix C (Soil Laboratory Results).

Twenty-two RPDs were found to be above 50% for the soil duplicates. The exceedances are summarised in Table 10 and are considered to be a result of the heterogeneous nature of the fill material, and the comparison of low concentrations approaching the laboratory's LOR producing high RPDs not reflective of data error. The remainder of the primary and duplicate soil concentrations for each of the analytes tested were either below the LOR, or within the acceptable RPD range. The QC results are considered acceptable based on this analysis.

Table 10: Summary of Soil Duplicate Samples Greater than 50% RPD

Sample Number	Material Type	Analyte	Primary Sample (mg/kg)	Duplicate Sample (mg/kg)	Duplicate Type	RPD (%)
BH02-1	Fill	As	8	14	Blind	55
				42	Split	136
		Total Cr	10	42	Blind	123
				21	Split	71
		Pb	7	13	Split	60
BH08-4	Fill	Zn	18	10	Split	57
		Total Cr	6	11	Split	59
		Zn	12	18	Blind	74
BH22-1	Fill	Pb	8	17	Split	72
BH32-1	Fill	Total Cr	10	17	Split	52
BH25-4	Fill	Cd	10	5	Blind	67
		Total Cr	34	6.5	Split	136
		Cu	53	22	Split	83
BH27-3	Fill	Total Cr	8	69	Blind	158
				68	Split	158
		Cu	7	27	Blind	118
				34	Split	132
		Pb	7	13	Split	60
		Ni	4	38	Blind	162
				77	Split	180
		Zn	7	40	Blind	140
				86	Split	170

7.8 Trip Blanks, Trip Spikes and Rinsate

During the investigation, one set of a trip blank and trip spike (Trip Blank 032809 and Trip Spike 7) accompanied the soil samples throughout the course of fieldwork and transportation to the analytical laboratory. The trip blank reported no detectable concentrations of analytes indicating that field, storage and transportation methodologies did not result in the cross contamination of samples.

The trip spike accompanied the soil samples throughout the transport from site and to the laboratory, while the control spike was retained at the laboratory. The purpose was to analyse both field and control spikes to assess if the field trip spike had lost any volatiles through transport and handling. It is considered that trip spike analysis shows that the field spike sample was comparable to the control spike sample, and that all samples were stored and transported in a fashion that prevented potential loss of volatiles.

The trip blank and trip spike results are presented in Table 4.

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7.9 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition.

Representativeness is primarily dependent on the design and implementation of the sampling program and is partially ensured by the avoidance of contamination, adherence to sample handling and analysis protocols, and use of proper chain-of-custody and documentation procedures. Blanks, holding times and field duplicates are all QA parameters that can assist in the analysis of representativeness.

The QA/QC evaluation presented in this report generally confirms the representativeness of the samples analysed. Therefore, the analytical data reported is considered suitable for the assessment of the site.

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SECTION 8 - CONCEPTUAL SITE MODEL

Based on results of the investigation and the required assessment of the sites feasibility for future developments, a Conceptual Site Model (CSM) has been developed below in order to assess the potential risks of the identified contaminants to both environmental and human receptors.

8.1 Potential Sources

The results of the investigation have identified a number of potential contamination sources, primarily the presence of potentially radioactive mineral sands identified both at the surface across areas of the site as well as at depth in two locations. An isolated heavy metal (As) concentration was identified at a depth between 0.3m and 0.5m below ground level. No asbestos has been identified in bores across the site, however traces of C&D waste was identified in a number of locations.

8.2 Potential Pathways

Fill in one sample has been identified to contain Arsenic exceeding the adopted clean fill criterion, which has the potential to be ingested via dust soil dust inhalation or direct soil contact (ingestion or dermal contact). It is noted that in the location where the Arsenic was detected, hardstand overlaid the material, therefore capping the soil and providing a physical barrier to site users. Therefore, the intentional disturbance by digging would be required to gain access to the contaminant, which is considered relatively unlikely given the current site uses. The current site users are limited to individuals using certain areas of the site for storage and are known to access these areas sporadically and not on a daily basis.

Analysis of the mineral sand for radioactivity confirmed the presence of radionuclide isotopes in all four samples analysed above the reported QLD average background levels. Based on the presence of radioactive isotopes within the mineral sands at the site, the potential pathways should be assessed. The potential radiological pathways for site users include external irradiation, inhalation and ingestion of dust released from the mineral sands during disturbance. Another potential pathway is for Radon gas generated from radioactive mineral sands only considered a risk for enclosed spaces and not in external areas of the site. The potential radiological pathway for users outside of the sites boundary is limited to the release of dust from the site.

On the basis that absence of asbestos cannot be confidently confirmed, asbestos pathways should still be considered. The main pathway between asbestos and human receptors is primarily inhalation of free fibres that are released from friable or disturbed ACM fragments. The disturbance such as digging or surface erosion may expose ACM fragments and create a potential pathway.

There is also not considered to be a pathway between the heavy metal concentration and the groundwater beneath the site, considering the shallow location of the contaminant and the relative depth to groundwater at the site.

8.3 Potential Receptors

Current potential environmental and ecological receptors include the groundwater beneath the site and the Brisbane River, which is partly overlain by a portion of the southern area of the site.

The potential human receptors at the site are primarily the current site users, who access the site on an irregular basis. Based on the location of the identified contaminants and the current site users, the risk of exposure from direct contact and exposure to radon gas in enclosed spaces is considered minimal for the potential human receptors within the site.

Based on the current uses of the neighbouring properties and the specific gravity of ilmenite mineral sands, it is considered unlikely for contaminants to cause impact through windborne dust. Based on topography of the site and location of contamination it is deemed that human, environmental and ecological receptors of the neighbouring properties are at minimal risk.

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SECTION 9 - CONCLUSIONS & RECOMMENDATIONS

Based on the results investigation undertaken by Butler Partners, the following conclusions are made:

- it is understood that this Preliminary Contamination Assessment is part of a feasibility study by CBRE to assess the site for future developments;
- the site comprises of the entirety of the property Lot 711 on SL4546 and the portions of two properties, Lot 302 on SP257483 and Lot 2 on SP224040. The site boundary covers an area of 5.255ha, however the land based area covers approximately 4.69ha with 0.565ha within the Brisbane River corridor;
- information for the EMR/CLR status of the site was provided prior to the investigation. Lot 711 on SL4546 was not listed on the EMR or CLR, Lot 302 on SP257483 is listed on the EMR but not on the CLR and the EMR/CLR status of Lot 2 on SP224040 is not listed on the EMR or the CLR;
- based on the land area of 4.69ha, thirty-two bores were drilled and sampled across to identify the location of potential contamination which does not meet the sampling density requirements of AS4482.1;
- soil samples were collected and analysed for a combination of heavy metals, PAHs, TRH, BTEXN, OCPs, PCBs, asbestos and radiation;
- concentration of Arsenic in a single sample of fill material was reported to be greater than the adopted clean fill criterion and HIL-A criterion. No asbestos was identified in bores across the site, however the presence of C&D waste within fill material, including ash, concrete and brick fragments, was widespread and it is considered that the potential for the presence of asbestos in the fill material is a risk; and
- radioactive mineral sand (ilmenite) has been identified both as a surface impact and at depth within fill material and has been confirmed by Qld Health to contain concentrations of radionuclide isotopes uranium and thorium that exceed the Queensland average concentration values for NORM radionuclides.

The shed labels and areas of potential environmental concern within site are presented in Drawing No. 2 Rev A and the soil exceedance (corresponding to land use criteria) is shown on Drawing No. 4 Rev B.

9.1 Recommendations

During drilling in bores, asbestos containing materials are generally very difficult to detect due to the mechanical drilling action. Based on the presence of C&D waste and observations of its content, the likelihood of asbestos being present within the fill material is considered high. Excavation of test pits across the site would be required to provide a more detailed assessment of asbestos presence, however, this will compromise the existing site surface, therefore, in the interim, it should be assumed that asbestos may be present in fill material beneath the site and any excavation on the site should be managed accordingly.

Also due to storage in several warehouses and the dilapidated state of others, access into all of the warehouses was not possible and as such, data gaps exist across several areas of the site. Once access to these areas is available, an additional twenty sampling locations, based on the land area within the site of 4.69ha, are recommended in order to meet the minimum sampling density requirements of AS4482.1-2005.

The ilmenite sand that is present across the site (as shown on Drawing No.4 Rev. B) has been confirmed to contain radioactive isotopes uranium and thorium that exceed the Queensland average concentration values for NORM radionuclides. As such, the recommendations are;

- any ilmenite sands excavated or removed should remain on-site and cannot be removed from the property lot boundaries, as it is considered either a 'regulated Waste' and/or a 'Soil containing a hazardous contaminant';
- all of the sand from within the conveyer belt trench (or across other surface areas where identified), if needed to be removed and excavated, must be stockpiled in a designated area on site, with appropriate sediment controls put in place (i.e. sed socks around the base of stockpile and covered with a suitable Geofabric or plastic sheeting to reduce runoff);
- health and safety controls for staff should be conservative at this point with hoses used for dust suppression and staff on ground wearing Tyvek suits with gloves and a P2 mask. This is conservative, but recommended to reduce staff exposure to dust inhalation which is considered the biggest risk while disturbing the ilmenite; and
- if ilmenite sand is intended to be disposed offsite, leachate testing will need to be undertaken in order to dispose of this material at a licensed landfill under a DES Soil Disposal Permit.

A person suitably qualified in accordance with Section 564 of the *Environmental Protection Act 1994* supervised all investigation works and compiled this Preliminary Contamination Assessment report.

BUTLER PARTNERS PTY LTD

KIERAN VAN BRECHT
GeoEnvironmental Engineer

SUZANNE WALKER
Principal

RICHARD PEARCE
Environmental Scientist

Important Information About Your Geoenvironmental Report

Geoenvironmental studies are commissioned to gain information about environmental conditions on and beneath the surface of a site. The more comprehensive the study, the more reliable the assessment is likely to be. But remember: Any such assessment is to a greater or lesser extent based on professional opinions about conditions that cannot be seen or tested. Accordingly, no matter how many data are developed, risks created by unanticipated conditions will always remain. *Have realistic expectations.* Work with your geoenvironmental consultant to manage known and unknown risks. Part of that process should already have been accomplished, through the risk allocation provisions you and your geoenvironmental professional discussed and included in your contract's general terms and conditions. This document is intended to explain some of the concepts that may be included in your agreement, and to pass along information and suggestions to help you manage your risk.

Beware of Change; Keep Your Geoenvironmental Professional Advised

The design of a geoenvironmental study considers a variety of factors that are subject to change. Changes can undermine the applicability of a report's findings, conclusions, and recommendations. *Advise your geoenvironmental professional about any changes you become aware of.* Geoenvironmental professionals cannot accept responsibility or liability for problems that occur because a report fails to consider conditions that did not exist when the study was designed. Ask your geoenvironmental professional about the types of changes you should be particularly alert to. Some of the most common include:

- modification of the proposed development or ownership group,
- sale or other property transfer,
- replacement of or additions to the financing entity,
- amendment of existing regulations or introduction of new ones, or
- changes in the use or condition of adjacent property.

Should you become aware of any change, *do not rely on a geoenvironmental report.* Advise your geoenvironmental professional immediately; follow the professional's advice.

Recognize the Impact of Time

A geoenvironmental professional's findings, recommendations, and conclusions cannot remain valid indefinitely. The more time that passes, the more likely it is that important latent changes will occur. *Do not rely on a geoenvironmental report if too much time has elapsed since it was completed.* Ask your environmental professional to define "too much time." In the case of Phase I Environmental Site Assessments (ESAs), for example, more than 180 days after submission is generally considered "too much."

Prepare To Deal with Unanticipated Conditions

The findings, recommendations, and conclusions of a Phase I ESA report typically are based on a review of historical information, interviews, a site "walkover," and other forms of noninvasive research. When site subsurface conditions are not sampled in any way, the risk of unanticipated conditions is higher than it would otherwise be.

While borings, installation of monitoring wells, and similar invasive test methods can help reduce the risk of unanticipated conditions, *do not overvalue the effectiveness of testing.* Testing provides information about actual conditions only at the precise locations where samples are taken, and only when they are taken. Your geoenvironmental professional has applied that specific information to develop a general opinion about environmental conditions. *Actual conditions in areas not sampled may differ (sometimes sharply) from those predicted in a report.* For example, a site may contain an unregistered underground storage tank that shows no surface trace of its existence. *Even conditions in areas that were tested can change,* sometimes suddenly, due to any number of events, not the least of which include occurrences at

adjacent sites. Recognize, too, that *even some conditions in tested areas may go undiscovered*, because the tests or analytical methods used were designed to detect only those conditions assumed to exist.

Manage your risks by retaining your geoenvironmental professional to work with you as the project proceeds. Establish a contingency fund or other means to enable your geoenvironmental professional to respond rapidly, in order to limit the impact of unforeseen conditions. And to help prevent any misunderstanding, identify those empowered to authorize changes and the administrative procedures that should be followed.

Do Not Permit Any Other Party To Rely on the Report

Geoenvironmental professionals design their studies and prepare their reports to meet the specific needs of the clients who retain them, in light of the risk management methods that the client and geoenvironmental professional agree to, and the statutory, regulatory, or other requirements that apply. The study designed for a developer may differ sharply from one designed for a lender, insurer, public agency...or even another developer. *Unless the report specifically states otherwise, it was developed for you and only you.* Do not unilaterally permit any other party to rely on it. The report and the study underlying it may not be adequate for another party's needs, and you could be held liable for shortcomings your geoenvironmental professional was powerless to prevent or anticipate. Inform your geoenvironmental professional when you know or expect that someone else—a third-party—will want to use or rely on the report. *Do not permit third-party use or reliance until you first confer with the geoenvironmental professional who prepared the report.* Additional testing, analysis, or study may be required and, in any event, appropriate terms and conditions should be agreed to so both you and your geoenvironmental professional are protected from third-party risks. *Any party who relies on a geoenvironmental report without the express written permission of the professional who prepared it and the client for whom it was prepared may be solely liable for any problems that arise.*

Avoid Misinterpretation of the Report

Design professionals and other parties may want to rely on the report in developing plans and specifications. They need to be advised, in writing, that their needs may not have been considered when the study's scope was developed, and, even if their needs were considered, they might misinterpret geoenvironmental findings, conclusions, and recommendations. *Commission your geoenvironmental professional to explain pertinent elements of the report to others who are permitted to rely on it, and to review any plans, specifications or other instruments of professional service that incorporate any of the report's findings, conclusions, or recommendations.* Your geoenvironmental professional has the best understanding of the issues involved, including the fundamental assumptions that underpinned the study's scope.

Give Contractors Access to the Report

Reduce the risk of delays, claims, and disputes by giving contractors access to the full report, *providing that it is accompanied by a letter of transmittal that can protect you* by making it unquestionably clear that: 1) the study was not conducted and the report was not prepared for purposes of bid development, and 2) the findings, conclusions, and recommendations included in the report are based on a variety of opinions, inferences, and assumptions and are subject to interpretation. Use the letter to also advise contractors to consult with your geoenvironmental professional to obtain clarifications, interpretations, and guidance (a fee may be required for this service), and that—in any event—they should conduct additional studies to obtain the specific type and extent of information each prefers for preparing a bid or cost estimate. Providing access to the full report, with the appropriate caveats, helps prevent formation of adversarial attitudes and claims of concealed or differing conditions. If a contractor elects to ignore the warnings and advice in the letter of transmittal, it would do so at its own risk. Your geoenvironmental professional should be able to help you prepare an effective letter.

Do Not Separate Documentation from the Report

Geoenvironmental reports often include supplemental documentation, such as maps and copies of regulatory files, permits, registrations, citations, and correspondence with regulatory agencies. If subsurface explorations were performed, the report may contain final boring logs and copies of laboratory data. If remediation activities occurred on site, the report may include: copies of daily field reports; waste manifests; and information about the disturbance of subsurface materials, the type and thickness of any fill placed on site, and fill placement practices, among other types of documentation. *Do not separate supplemental documentation from the report. Do not, and do not permit any other party to redraw or modify any of the supplemental documentation for incorporation into other professionals' instruments of service.*

Understand the Role of Standards

Unless they are incorporated into statutes or regulations, standard practices and standard guides developed by the American Society for Testing and Materials (ASTM) and other recognized standards-developing organizations (SDOs) are little more than aspirational methods agreed to by a consensus of a committee. The committees that develop standards may not comprise those best-qualified to establish methods and, no matter what, no standard method can possibly consider the infinite client- and project-specific variables that fly in the face of the theoretical "standard conditions" to which standard practices and standard guides apply. In fact, these variables can be so pronounced that geoenvironmental professionals who comply with every directive of an ASTM or other standard procedure could run afoul of local custom and practice, thus violating the standard of care.

Accordingly, when geoenvironmental professionals indicate in their reports that they have performed a service "in general compliance" with one standard or another, it means they have applied professional judgement in creating and implementing a scope of service designed for the specific client and project involved, and which follows some of the general precepts laid out in the referenced standard. To the extent that a report indicates "general compliance" with a standard, you may wish to speak with your geoenvironmental professional to learn more about what was and was not done. *Do not assume a given standard was followed to the letter.* Research indicates that that seldom is the case.

Realize That Recommendations May Not Be Final

The technical recommendations included in a geoenvironmental report are based on assumptions about actual conditions, and so are preliminary or tentative. Final recommendations can be prepared only by observing actual conditions as they are exposed. For that reason, you should retain the geoenvironmental professional of record to observe construction and/or remediation activities on site, to permit rapid response to unanticipated conditions. *The geoenvironmental professional who prepared the report cannot assume responsibility or liability for the report's recommendations if that professional is not retained to observe relevant site operations.*

Understand That Geotechnical Issues Have Not Been Addressed

Unless geotechnical engineering was specifically included in the scope of professional service, a report is not likely to relate any findings, conclusions, or recommendations about the suitability of subsurface materials for construction purposes, especially when site remediation has been accomplished through the removal, replacement, encapsulation, or chemical treatment of on-site soils. The

equipment, techniques, and testing used by geotechnical engineers differ markedly from those used by geoenvironmental professionals; their education, training, and experience are also significantly different. If you plan to build on the subject site, but have not yet had a geotechnical engineering study conducted, your geoenvironmental professional should be able to provide guidance about the next steps you should take. The same firm may provide the services you need.

Read Responsibility Provisions Closely

Geoenvironmental studies cannot be exact; they are based on professional judgement and opinion. Nonetheless, some clients, contractors, and others assume geoenvironmental reports are or certainly should be unerringly precise. Such assumptions have created unrealistic expectations that have led to wholly unwarranted claims and disputes. To help prevent such problems, geoenvironmental professionals have developed a number of report provisions and contract terms that explain who is responsible for what, and how risks are to be allocated. Some people mistake these for "exculpatory clauses," that is, provisions whose purpose is to transfer one party's rightful responsibilities and liabilities to someone else. Read the responsibility provisions included in a report and in the contract you and your geoenvironmental professional agreed to. *Responsibility provisions are not "boilerplate."* They are important.

Rely on Your Geoenvironmental Professional for Additional Assistance

Membership in ASFE exposes geoenvironmental professionals to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a geoenvironmental project. Confer with your ASFE-member geoenvironmental professional for more information.



8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@asfe.org www.asfe.org

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IIGR06055.0M

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Butler Partners Pty Ltd
geotechnical • geo-environmental • groundwater

Butler Partners Pty Ltd
ABN 14 816 574 888
22 Corunna Street
Albion, Queensland 4010
P.O. Box 2267
Fortitude Valley BC
Queensland 4006
Ph: 61 7 3256 2900
Fax: 61 7 3256 2901
enquiries@butlerpartners.com.au



Investigated Area



USD Reference: Map 141 Grids DF19 (ACS.V6)
not to scale

Preliminary Contamination Assessment
89 Macarthur Avenue, Hamilton
Locality Plan
CLIENT:
Economic Development Queensland

LEGEND

Investigation Area

SmartMap
An External Product of
SmartMap Information Services
Based upon an extraction from the
Digital Cadastral Data Base



STANDARD MAP NUMBER
9543-33244

MAP HORIZONTAL POSITION &
NEAREST LOCATION

SUBJECT PARCEL DESCRIPTION

CC08
LOCALITY
LOCALITY
Terana
Local Government
LOCALITY
Segment/Parcel

25975040
1.800ha
BRISBANE CITY
HAMILTON
16513310

CLIENT SERVICE STANDARDS

PRINTED 20/04/2022

DC08 18/04/2022

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Butler Partners
geotechnical • geo-environmental • groundwater



Butler Partners Pty Ltd
ABN 14 816 574 988
22 Corunna Street
Ablon, Queensland 4010
P.O. Box 2267
Fortitude Valley BC
Queensland 4006
Ph: 61 7 3256 2900
Fx: 61 7 3256 2901
enquiries@butlerpartners.com.au

Investigated Area

USD Reference: Map 141 Grids DF19 (ACS,v6)
not to scale



LEGEND

Investigation Area

Preliminary Contamination Assessment

89 Macarthur Avenue, Hamilton

Historical Land Use and Development

CLIENT: Economic Development Queensland

SCALE AT A3:

DATE: APRIL 2022

DRAWN: LA

APPROVED:

PROJECT No: 018-150M

DRAWING No: 2

REV: A



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Butler Partners
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Butler Partners Pty Ltd
ABN 14 816 574 988
22 Corunna Street
Albion, Queensland 4010
P.O. Box 2267
Fortitude Valley BC
Queensland 4006
Ph: 61 7 3256 2900
Fx: 61 7 3256 2901
enquiries@butlerpartners.com.au

Preliminary Contamination Assessment 89 Macarthur Avenue, Hamilton		CLIENT: Economic Development Queensland
Locality Plan and Test Locations		
Investigated Area  USD Reference: Map 141 Grids DF19 (ACS16) not to scale		
SCALE AT A3: 		DATE: APRIL 2022 DRAWN: LA APPROVED: PROJECT No: 018-150M DRAWING No: 3 REV: A



LEGEND

- Investigation Area
- BH1 Bore
- SS01 Surface Sample



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Butler Partners Pty Ltd
ABN 14 816 574 888
22 Corunna Street
Ablion, Queensland 4010
P.O. Box 2267
Fortitude Valley BC
Queensland 4006
Ph: 61 7 3256 2900
Fx: 61 7 3256 2901
enquiries@butlerpartners.com.au

SS03	(U238)	(Th232)
Surface	71 ± 7	110 ± 20

BH27	(U238)	(Th232)
Surface	120 ± 10	50 ± 9

SS02	(U238)	(Th232)
Surface	360 ± 30	170 ± 20



Investigated Area



not to scale

Preliminary Contamination Assessment

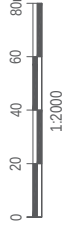
89 MacArthur Avenue, Hamilton

Locality Plan and Test Locations

CLIENT:

Economic Development Queensland

SCALE AT A3:



DATE:	JULY 2022
DRAWN:	LA
APPROVED:	
PROJECT No:	018-150M
DRAWING No:	4
REV:	B

LEGEND

- Bore
- Surface Sample
- Infinite Sand Present
- Investigation Area

Contamination Results

Test Location No.	BH3	As	140
Sample Depth	0.3 - 0.5m	140	

Sample Exceeds:

- Analyte Exceeds the HL-A Guideline Criteria
- Analyte Exceeds the QLD Average Concentration Values for NORM Radionuclides (Bq/kg)



APPENDIX A GOVERNMENT RECORDS





Department of Environment and Science (DES)
ABN 46 640 294 485
400 George St Brisbane, Queensland 4000
GPO Box 2454 Brisbane QLD 4001 AUSTRALIA
www.des.qld.gov.au

SEARCH RESPONSE
ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)

Transaction ID: 50520219 EMR Site Id: 133052 21 March 2019

This response relates to a search request received for the site:

Lot: 302 Plan: SP257483

SEARCH RESULT

The site you have searched is a lot resulting from the amalgamation of the following sites, which are included on the Environmental Management Register (EMR) or the Contaminated Land Register (CLR), as indicated below. Further details for these sites are available by contacting this Agency via email: emr.clr.registry@des.qld.gov.au

Lot Plan

783 SL4449 EMR

1005 SL6739 EMR

859 SL4540 EMR

ADDITIONAL ADVICE

All search responses include particulars of land listed in the EMR/CLR when the search was generated.

The EMR/CLR does NOT include:-

1. land which is contaminated land (or a complete list of contamination) if DES has not been notified
2. land on which a notifiable activity is being or has been undertaken (or a complete list of activities) if DES has not been notified

If you have any queries in relation to this search please phone 13QGOV (13 74 68)

Administering Authority



Department of Environment and Science (DES)
ABN 46 640 294 485
400 George St Brisbane, Queensland 4000
GPO Box 2454 Brisbane QLD 4001 AUSTRALIA
www.des.qld.gov.au

SEARCH RESPONSE
ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)

Transaction ID: 50520971 EMR Site Id: 26 March 2019
This response relates to a search request received for the site:
Lot: 711 Plan: SL4546

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

All search responses include particulars of land listed in the EMR/CLR when the search was generated.
The EMR/CLR does NOT include:-

1. land which is contaminated land (or a complete list of contamination) if DES has not been notified
2. land on which a notifiable activity is being or has been undertaken (or a complete list of activities) if DES has not been notified

If you have any queries in relation to this search please phone 13QGOV (13 74 68)

Administering Authority



Department of Environment and Science (DES)
ABN 46 640 294 485
400 George St Brisbane, Queensland 4000
GPO Box 2454 Brisbane QLD 4001 AUSTRALIA
www.des.qld.gov.au

SEARCH RESPONSE
ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)

Transaction ID: 50779727 EMR Site Id: 13 May 2022
This response relates to a search request received for the site:
Lot: 2 Plan: SP224040

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

The above site is NOT included on the Contaminated Land Register.

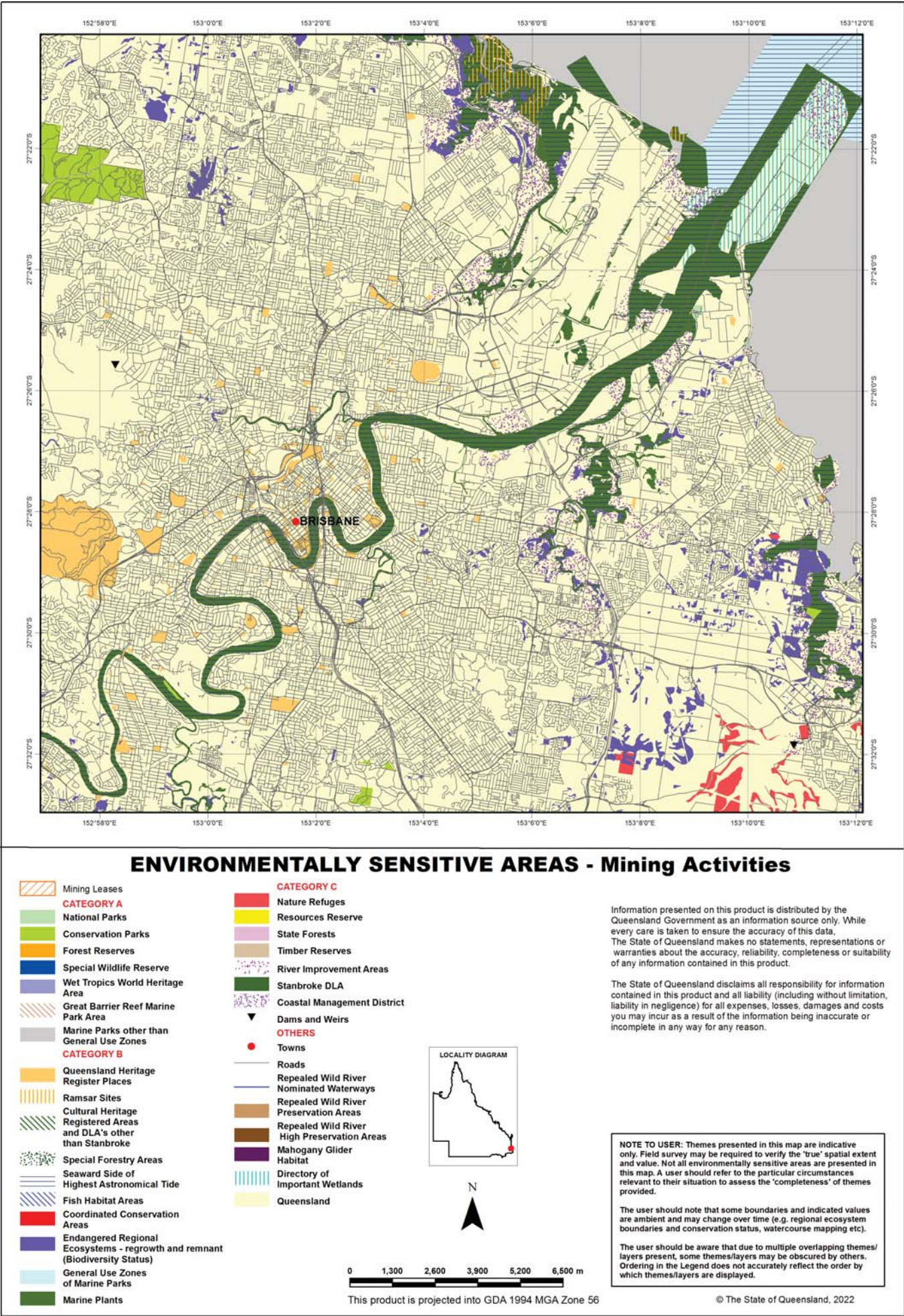
ADDITIONAL ADVICE

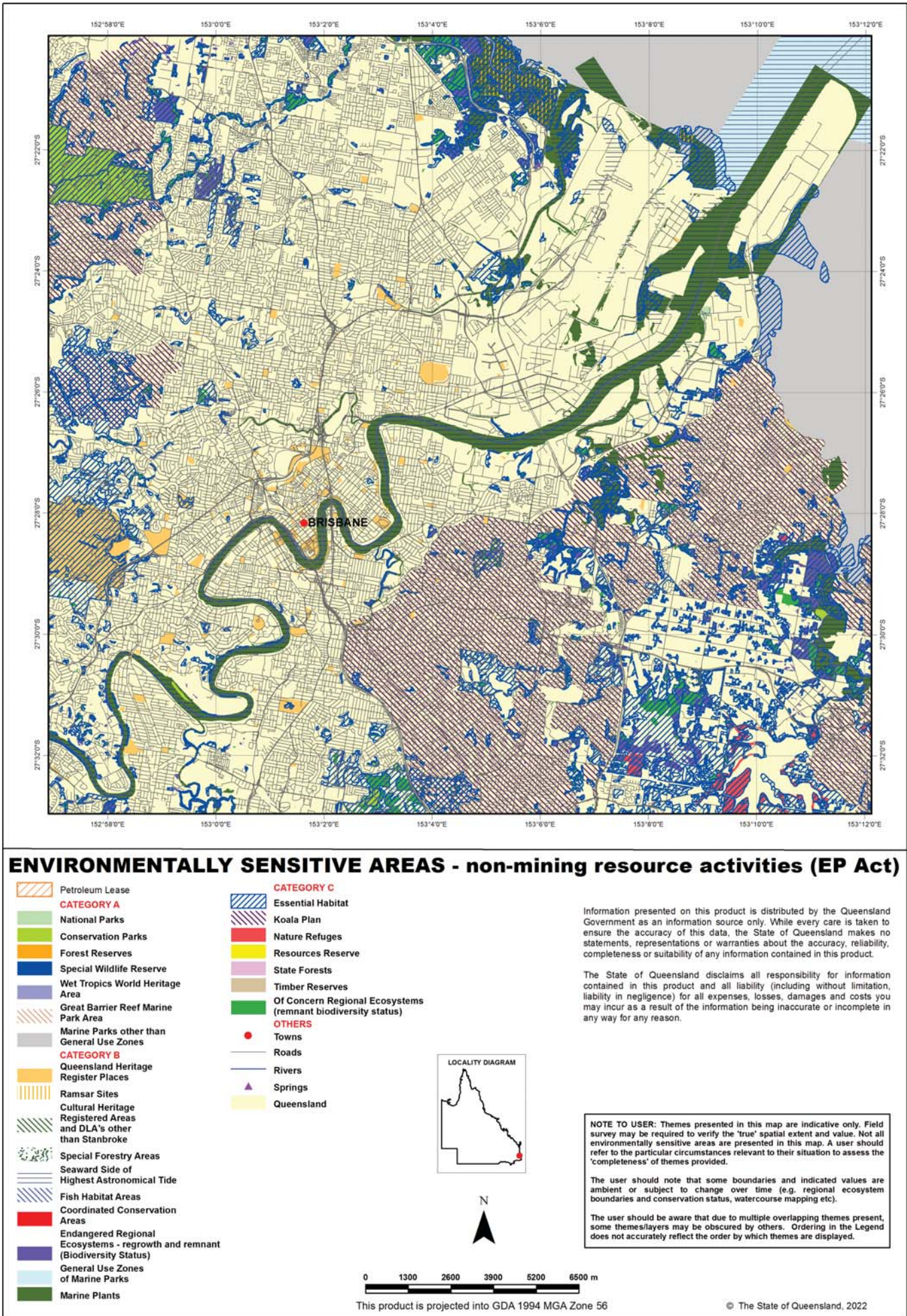
All search responses include particulars of land listed in the EMR/CLR when the search was generated.
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If you have any queries in relation to this search please phone 13QGOV (13 74 68)

Administering Authority







APPENDIX B

ENVIRONMENTAL BORE REPORTS WITH EXPLANATORY NOTES



ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH01

Page No: 1 of 1

Date: 12 April 2022

Ground Surface Level: RL3.8m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	FILL - black ilmenite sand, fine to coarse sand, fine to medium subangular gravel	3.8		E/P	0.0	BH1-1
	- brown, silty sand, fine to coarse grained			E/A	0.15	BH1-2
	- dark grey, gravelly silty clay, fine to medium, subangular gravel				0.3	
	- pale brown mottled grey, silty clay (damp)				0.5	
1		3.0		E	0.8	BH1-3
					1.0	
	SILTY CLAY - dark grey, trace of fine to medium grained sand			E	1.3	BH1-4
	- dark grey				1.5	
2		2.0		E	1.8	BH1-5
					2.0	
	End of Bore at 2 m					
		1.0				
3						
		0.0				
4						
		-1.0				
5						
		-2.0				
6						
		-3.0				
7						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 1.6m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH02

Page No: 1 of 1

Date: 12 April 2022

Ground Surface Level: RL3.7m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 25mm	3.7				
	FILL			E/A	0.25	BH2-1
	- grey-brown, gravelly sand, fine to coarse subangular gravel, (road base)			E/A	0.35	QC01
	- pale brown mottled grey, silty clay			E/A	0.4	QC02
	- brown, sand, fine to medium grained			E	0.5	BH2-2
	- dark grey, gravelly silty clay, fine to coarse subangular gravel			E	0.7	BH2-3
	- brown, sand, fine to medium grained (suspected dredge spoil)			E	0.9	
				E	1.3	BH2-4
				E	1.5	
				E	1.8	BH2-5
				E	2.0	
				E	2.3	BH2-6
				E	2.5	
				E	2.8	BH2-7
				E	3.0	
				E	3.3	BH2-8
				E	3.5	
	CLAYEY SAND	0.0		E	3.8	BH2-9
	- grey-brown, fine to coarse grained			E	4.0	
	SAND			E	4.3	BH2-10
	- brown, fine to coarse grained			E	4.5	
				E	4.8	BH2-11
	- trace of silt			E	5.0	
				E	5.3	BH2-12
				E	5.5	
	End of Bore at 5.5 m	-2.0				
		-3.0				

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 3.1m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH03

Page No: 1 of 1

Date: 12 April 2022

Ground Surface Level: RL3.7m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.7		E/P	0.02	BH03-1
	FILL			E/A	0.2	
	- black gravelly ash, fine to medium gravel, with brick fragments				0.3	BH03-2
	- grey-brown mottled orange, silty clay, fine to coarse subangular gravel				0.5	
1	- brown, sand, fine to coarse grained	3.0		E	0.8	BH03-3
	- grey, silty clay			E	1.0	
	- brown, sand, fine to coarse grained			E	1.3	BH03-4
2	- grey-brown, clayey sand, fine to coarse grained	2.0		E	1.5	
	- brown, sand, fine to coarse grained (suspected dredged spoil)			E	1.8	BH03-5
				E	2.0	
				E	2.3	BH03-6
		1.0		E	2.5	
3				E	2.8	BH03-7
				E	3.0	
				E	3.3	BH03-8
				E	3.5	
4	CLAYEY SAND	0.0		E	3.8	BH03-9
	- grey-brown, fine to coarse grained			E	4.0	
				E	4.3	BH03-10
					4.5	
	End of Bore at 4.5 m	-1.0				
5						
		-2.0				
6						
		-3.0				
7						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.9m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH04

Page No: 1 of 1

Date: 12 April 2022

Ground Surface Level: RL3.5m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.5				
	FILL			E	0.1	BH04-1
	- grey-brown, clayey sand, fine to medium subangular gravel	3.0		E	0.3	BH04-2
	- trace of brick fragments				0.4	
1	- brown, sand, fine to coarse grained (suspected dredged spoil)			E	0.5	BH04-3
					0.8	
					1.0	
				E	1.3	BH04-4
		2.0			1.5	
2				E	1.8	BH04-5
					2.0	
				E	2.3	BH04-6
		1.0			2.5	
				E	2.8	BH04-7
3					3.0	
	SAND					
	- grey brown, trace of silt			E	3.3	BH04-8
	End of Bore at 3.5 m	0.0			3.5	
4						
		-1.0				
5						
		-2.0				
6						
		-3.0				
7						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.8m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH05

Page No: 1 of 1

Date: 12 April 2022

Ground Surface Level: RL3.2m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.2		E/P	0.02	BH05-1
	FILL			E	0.2	
	- grey-brown, gravelly sand, fine to coarse subangular gravel			E	0.3	BH05-2
				E	0.5	
1				E	0.8	BH05-3
				E	1.0	
	- brown, sand, fine to coarse grained	2.0		E	1.3	BH05-4
				E	1.5	
2	SAND			E	1.8	BH05-5
	- brown, fine to coarse grained	1.0		E	2.0	
				E	2.3	BH05-6
				E	2.5	
	End of Bore at 2.5 m					
3						
		0.0				
4						
		-1.0				
5						
		-2.0				
6						
		-3.0				
7						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.5m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH06

Page No: 1 of 1

Date: 12 April 2022

Ground Surface Level: RL3.0m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	CONCRETE - 170mm	3.0				
	FILL			E/P	0.17	BH06-1
	- brown, sand, fine to coarse grained, fine to medium gravel			E/A	0.25	BH06-2
					0.3	
					0.5	
				E	0.8	BH06-3
1	- fine to coarse gravel	2.0			1.0	
				E	1.3	BH06-4
					1.5	
				E	1.8	BH06-5
2	- grey-brown, clayey sand, fine to coarse grained	1.0			2.0	
	- brown, sand, fine to coarse grained			E	2.3	BH06-6
					2.5	
	SAND			E	2.8	BH06-7
3	- brown, fine to coarse grained	0.0			3.0	
				E	3.3	BH06-8
					3.5	
	End of Bore at 3.5 m					
4		-1.0				
5		-2.0				
6		-3.0				
7		-4.0				

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.8m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH07

Page No: 1 of 1

Date: 12 April 2022

Ground Surface Level: RL3.2m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.2		E/A	0.02	BH07-1
	FILL			E	0.2	
	- brown gravelly sand, fine to coarse grained, fine to coarse subangular gravel			E	0.4	BH07-2
	- brown, sand, fine to coarse grained, fine to medium subangular gravel			E	0.5	
				E	0.8	BH07-3
1				E	1.0	
	- clayey sand, fine to coarse grained	2.0		E	1.3	BH07-4
				E	1.5	
	- dark brown, sand, fine to coarse subangular to subrounded gravel			E	1.8	BH07-5
2				E	2.0	
		1.0		E	2.3	BH07-6
				E	2.5	
				E	2.8	BH07-7
3				E	3.0	
		0.0		E	3.4	BH07-8
				E	3.5	
				E	3.8	BH07-9
4	CLAYEY SAND			E	4.0	
	- grey-brown, fine to coarse grained	-1.0		E	4.3	BH07-10
				E	4.5	
	End of Bore at 4.5 m					
5		-2.0				
6		-3.0				
7						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 3.6m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH08

Page No: 1 of 1

Date: 12 April 2022

Ground Surface Level: RL2.9m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	2.9		E/P	0.02	BH08.1
	FILL			E/A	0.2	
	- grey-brown, sandy clay, trace of fine to coarse subangular gravel				0.3	
	- brown, sand, fine to coarse grained				0.5	BH08-2
1		2.0		E	0.8	BH08-3
				E	1.0	
				E	1.3	BH08-4
					1.5	OC03
						QC04
2		1.0		E	1.8	BH08-5
					2.0	
				E	2.3	BH08-6
					2.5	
3	SAND	0.0		E	2.8	BH08-7
	- brown, fine to coarse grained, wet				3.0	
				E	3.3	BH08-8
					3.5	
	End of Bore at 3.5 m					
4		-1.0				
5		-2.0				
6		-3.0				
7		-4.0				

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.8m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH09

Page No: 1 of 1

Date: 12 April 2022

Ground Surface Level: RL2.9m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	2.9		A/E	0.02	BH09-1
	FILL			E	0.2	
	- brown-grey, clayey sand, fine to coarse grained			E	0.3	
	- brown, sand, fine to coarse grained			E	0.5	BH09-2
1		2.0		E	0.8	BH09-3
				E	1.0	
				E	1.3	BH09-4
				E	1.5	
2		1.0		E	1.8	BH09-5
				E	2.0	
				E	2.3	BH09-6
				E	2.5	
3	SAND	0.0		E	2.8	BH09-7
	- brown, fine to coarse grained			E	3.0	
				E	3.3	BH09-8
				E	3.5	
	End of Bore at 3.5 m					
4		-1.0				
5		-2.0				
6		-3.0				
7		-4.0				

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.3m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH10

Page No: 1 of 1

Date: 14 April 2022

Ground Surface Level: RL3.2m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.2			0.02	
	FILL			E	0.25	BH10-1
	- grey-brown, gravelly sand, fine to medium grained, fine to coarse subangular gravel			E/A	0.4	BH10-2
	- brown				0.5	
	- brown, clayey sand, fine to coarse grained			E	0.8	BH10-3
1					1.0	
	- grey-brown	2.0		E	1.3	BH10-4
					1.5	
2	- brown, sand, fine to coarse grained			E	1.9	BH10-5
	SAND				2.1	
	- brown, fine to coarse grained	1.0		E	2.3	BH10-6
					2.5	
	End of Bore at 2.5 m					
3						
		0.0				
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.1m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH11

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.4m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	CONCRETE - 230mm	3.4				BH11-8
	FILL					
	- brown, sand, fine to coarse grained	3.0		E/A	0.25	BH11-1
				E/P	0.5	BH11-2
	- pale brown			E	0.6	BH11-3
1					0.7	
				E	0.9	BH11-4
					1.0	
		2.0		E	1.3	BH11-4
	- brown				1.5	
				E	1.8	BH11-5
2					2.0	
		1.0		E	2.3	BH11-6
					2.5	
	- grey-brown, clayey sand, fine to coarse grained, fine to coarse subangular gravel, traces of timber			E	2.8	BH11-7
3					3.0	
	- brown, sand, fine to coarse grained, fine to coarse subangular gravel				3.3	BH11-8
		0.0		E	3.5	
					3.8	BH11-9
4	SAND			E	4.0	
	- brown, fine to coarse grained (very wet)				4.3	BH11-10
		-1.0		E	4.5	
	End of Bore at 4.5 m					
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 3.3m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH12

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.5m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.5			0.02	
	FILL			E/A/P	0.25	BH12-1
	- pale grey, gravelly sand, fine to coarse grained, fine to coarse subangular gravel			E	0.3	BH12-2
		3.0			0.5	
				E	0.8	BH12-3
					1.0	
	- grey-brown, sandy silt, fine to coarse grained, fine to medium subangular gravel			E	1.3	BH12-4
		2.0			1.5	
	- grey-brown, sandy clay, fine to coarse grained			E	1.8	BH12-5
					2.0	
	- brown, sand, fine to coarse grained, fine to medium subangular gravel			E	2.3	BH12-6
		1.0			2.5	
				E	2.9	BH12-7
	SAND				3.0	
	- brown, fine to coarse grained (damp)			E	3.3	BH12-8
		0.0			3.5	
	End of Bore at 3.5 m					
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 3.1m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH13

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL2.9m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	2.9			0.02	BH13-1
	FILL			E/A	0.25	
	- grey-brown, clayey sand, fine to coarse grained			E	0.3	BH13-2
	- brown, sand, fine to coarse grained				0.5	
				E	0.8	BH13-3
	- dark grey, silty clay			E	1.3	BH13-4
	- brown, sand, fine to coarse grained				1.5	
				E	1.8	BH13-5
					2.0	
				E	2.3	BH13-6
					2.5	
	SAND			E	2.8	BH13-7
	- brown, fine to coarse grained				3.0	
				E	3.3	BH13-8
	End of Bore at 3.5 m				3.5	
4		-1.0				
5		-2.0				

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.6m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH14

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.5m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.5			0.02	BH14-1
	FILL			E/P	0.25	
	- grey-brown, gravelly sand, fine to coarse grained, fine to coarse subangular gravel			E/A	0.3	BH14-2
	- black ash, fine to coarse subangular gravel	3.0			0.5	
				E/A	0.8	BH14-3
1	- grey-brown, clayey sand, fine to coarse grained				1.0	
				E	1.3	BH14-4
		2.0			1.5	
	- dark grey, silty clay			E	1.8	BH14-5
2	- grey-brown, clayey sand, fine to coarse grained				2.0	
				E	2.3	BH14-6
		1.0			2.5	
				E	2.8	BH14-7
3	SAND				3.0	
	- brown					
	- trace of grey, silty clay			E	3.3	BH14-8
	End of Bore at 3.5 m	0.0			3.5	
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.9m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH15

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.3m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.3			0.02	
	FILL			E/P	0.3	BH15-1
	- grey-brown, gravelly sand, fine to coarse subangular gravel	3.0		E/A	0.4	BH15-2
	- black gravelly ash, concrete fragments				0.5	
	- brown, sand, fine to coarse grained			E	0.8	BH15-3
1					1.0	
		2.0		E	1.3	BH15-4
					1.5	
				E	1.8	BH15-5
2					2.0	
		1.0		E	2.3	BH15-6
					2.5	
				E	2.8	BH15-7
3	SAND				3.0	
	- brown, fine to coarse grained					
		0.0		E	3.3	BH15-8
					3.5	
	End of Bore at 3.5 m					
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.8m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH16

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.3

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.3			0.02	
	FILL			E/A	0.25	BH16-1
	- grey- brown, gravelly sand, fine to coarse grained, fine to coarse subangular gravel	3.0		E	0.3	BH16.2
	- orange-brown, sand, fine to coarse grained				0.5	
1				E	0.8	BH16-3
					1.0	
		2.0		E	1.3	BH16-4
					1.5	
				E	1.8	BH16-5
2	SAND				2.0	
	- brown, fine to coarse grained	1.0		E	2.3	BH16-6
					2.5	
	End of Bore at 2.5 m					
3						
		0.0				
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.5m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH17

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.3m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.3			0.02	
	FILL			A/E/P	0.25	BH17-1
	- grey-brown, gravelly sand, fine to coarse grained, fine to coarse subangular gravel	3.0		E	0.3	BH17-2
	- orange-brown				0.5	
				E	0.8	BH17-3
1	- tuff cobbles				1.0	
	- brown, sand, fine to coarse grained	2.0		E	1.3	BH17-4
					1.5	
				E	1.8	BH17-5
2					2.0	
		1.0		E	2.3	BH17-6
	SAND				2.5	
	- brown, fine to coarse grained (wet)			E	2.8	BH17-7
3					3.0	
		0.0		E	3.3	BH17-8
	End of Bore at 3.5 m				3.5	
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.8m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH18

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.5m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.5			0.02	
	FILL			E/A	0.25	BH18-1
	- orange-brown, gravelly sand, fine to medium grained, fine to coarse gravel			E	0.3	BH18-2
		3.0			0.5	
	- brown, faint hydrocarbon odour			E/P	0.8	BH18-3
1					1.0	
	- no odour			E	1.3	BH18-4
	- brown, sand, fine to coarse grained	2.0			1.5	
2				E	1.8	BH18-5
					2.0	
		1.0		E	2.3	BH18-6
					2.5	
3	SAND			E	2.8	BH18-7
	- brown, fine to coarse grained (wet)				3.0	
				E	3.3	BH18-8
	End of Bore at 3.5 m	0.0			3.5	
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.8m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH19

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.7m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.7			0.02	
	FILL			E/A	0.25	BH19-1
	- grey-brown, gravelly sand, fine to coarse grained, fine to coarse gravel			E/P	0.3	BH19-2
	- orange-brown				0.5	
1		3.0		E	0.8	BH19-3
					1.0	
				E	1.3	BH19-4
					1.5	
2	- trace of brick fragments and asphalt	2.0		E/A	1.8	BH19-5
					2.0	
				E	2.3	BH19-6
					2.5	
3	SAND	1.0			2.8	BH19-7
	- brown, fine to coarse grained			E	3.0	
	- trace of grey silt				3.3	BH19-8
				E	3.5	
	End of Bore at 3.5 m	0.0				
4						
5		-1.0				

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.7m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH20

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.5m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.5			0.02	
	FILL			E/P	0.25	BH20-1
	- pale brown, gravelly sand, fine to coarse grained, fine to coarse gravel				0.3	
	- orange-brown	3.0		E/A	0.5	BH20-2
	- grey-brown, with brick fragments				0.8	
1	- dark brown			E	1.0	BH20-3
					1.3	
	- brown, sand, fine to coarse grained	2.0		E	1.5	BH20-4
2					1.8	
				E	2.0	BH20-5
					2.3	
		1.0		E	2.5	BH20-6
	SAND				2.8	
3	- brown, fine to coarse grained			E	3.0	BH20-7
					3.3	
		0.0		E	3.5	BH20-8
4	End of Bore at 3.7 m					
5		-1.0				

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.6m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH21

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.4m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 100mm	3.4				
	FILL			E/A	0.1	BH21-1
	- pale grey, gravelly sand, fine to coarse grained, fine to coarse gravel	3.0		E/P	0.3	BH21-2
	- grey, gravelly sand, fine to coarse grained, fine to coarse gravel				0.5	
				E	0.8	BH21-3
	- brown				1.0	
		2.0		E	1.3	BH21-4
	- brown, sand, fine to coarse grained				1.5	
				E	1.8	BH21-5
					2.0	
		1.0		E	2.3	BH21-6
					2.5	
	SAND			E	2.8	BH21-7
	- brown, fine to coarse grained				3.0	
		0.0		E	3.3	BH21-8
	End of Bore at 3.5 m				3.5	
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.9m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH22

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.4m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.4			0.02	BH22-1
	FILL			E	0.25	QC05
	- pale brown, gravelly sand, fine to coarse grained, fine to coarse gravel	3.0			0.4	QC06
	- dark brown			E/A	0.5	BH22-2
1				E/P	0.8	BH22-3
	- brown, sand, fine to coarse grained	2.0		E	1.3	BH22-4
2	SAND			E	1.5	
	- brown, fine to coarse grained			E	1.8	BH22-5
		1.0		E	2.0	
					2.3	
	End of Bore at 2.5 m				2.5	BH22-6
3						
		0.0				
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.3m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH23

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.5m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	CONCRETE - 130mm	3.5			0.02	BH23-1
	FILL			E/A	0.25	
	- brown, sand, fine to coarse grained			E/P	0.3	BH23-2
	- pale grey, gravelly sand, fine to medium grained, fine to medium gravel	3.0			0.5	
1				E	0.8	BH23-3
	- dark grey, silty clay			E	1.3	BH23-4
	- brown sand, fine to coarse grained	2.0			1.5	
2				E	1.8	BH23-5
	- grey-brown, clayey sand, fine to coarse grained			E	2.3	BH23-6
	SAND	1.0			2.5	
	- brown, fine to coarse grained			E	2.8	BH23-7
3				E	3.0	
				E	3.3	BH23-8
	End of Bore at 3.5 m	0.0			3.5	
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.6m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH24

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.6m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	CONCRETE - 140mm	3.6				
	FILL			E/A	0.14	BH24-1
	- brown, sand, fine to coarse grained			E	0.3	
					0.4	BH24-2
	- grey-brown, gravelly sand, fine to medium grained, fine to medium subangular gravel, trace of brick fragments, slight hydrocarbon odour	3.0		E	0.5	
1				E	0.8	BH24-3
					1.0	
				E	1.3	BH24-4
					1.5	
	- brown, sand, fine to coarse grained	2.0		E	1.8	BH24-5
2					2.0	
				E	2.3	BH24-6
					2.5	
	SAND	1.0				
	- brown, fine to coarse grained			E	2.8	BH24-7
3					3.0	
				E	3.3	BH24-8
					3.5	
	End of Bore at 3.5 m	0.0				
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.7m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH25

Page No: 1 of 1

Date: 13 April 2022

Ground Surface Level: RL3.4m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.4			0.02	
	FILL			E/A	0.25	BH25-1
	- grey-brown, gravelly sand, fine to coarse grained, fine to medium subangular gravel	3.0		E	0.3	BH25-2
	- grey, gravelly silty clay, fine to medium gravel				0.5	
				E	0.8	BH25-3
					1.0	
	- brown, sand, fine to coarse grained	2.0		E	1.3	BH25-4
					1.5	QC09
					1.8	QC10
				E	2.0	BH25-5
	SAND					
	- brown, fine to coarse grained	1.0		E	2.3	BH25-6
	End of Bore at 2.5 m				2.5	
3						
		0.0				
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: No free ground water encountered during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH26

Page No: 1 of 1

Date: 14 April 2022

Ground Surface Level: RL3.2m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	FILL - grey, gravelly sand, fine to medium grained, fine to coarse gravel - brown, fine to medium gravel	3.2		E/A/P	0.1	BH26-1
				E	0.3	
				E	0.4	BH26-2
				E	0.5	
	- pale brown and grey, sandy clay, fine to coarse subangular gravel			E	0.8	BH26-3
1				E	1.0	
		2.0		E	1.3	BH26-4
				E	1.5	
	- grey			E	1.8	BH26-5
2	- brown, sand, fine to coarse grained				2.0	
	SAND - brown, fine to coarse grained	1.0		E	2.3	BH26-6
				E	2.5	
				E	2.8	BH26-7
3	End of Bore at 3 m	0.0			3.0	
4		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: No free ground water encountered during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH27

Page No: 1 of 1

Date: 14 April 2022

Ground Surface Level: RL3.4m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	FILL - grey, gravelly sand, fine to medium grained, fine to coarse subangular gravel - black ilmenite sand	3.4			0.05	
				E	0.25	BH27-1
				E/A	0.3	
		3.0			0.5	BH27-2
	- grey-brown, sandy clay					
1				E/P	0.8	BH27-3 QC11 QC12
					1.0	
	- brown, sand, fine to coarse grained					
		2.0		E	1.3	
					1.5	BH27-4
2				E	1.8	
					2.0	BH27-5
	SAND - brown, fine to coarse grained					
		1.0		E	2.3	
					2.5	BH27-6
	End of Bore at 2.5 m					
3						
		0.0				
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: free ground water encountered at 2.1m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH28

Page No: 1 of 1

Date: 14 April 2022

Ground Surface Level: RL3.5

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	BITUMONEUS CONCRETE - 20mm	3.5			0.02	
	FILL			E/P	0.25	BH28-1
	- brown, gravelly sand, fine to coarse grained, fine to coarse subangular gravel				0.3	
				E/A	0.5	BH28-2
	- brown, clayey sand, fine to coarse grained, fine to coarse subangular gravel				0.8	
1				E	1.0	BH28-3
	- dark grey, silty clay				1.3	
				E	1.5	BH28-4
	- brown, clayey sand, fine to coarse grained				1.8	
2				E	2.0	BH28-5
	CLAYEY SAND				2.3	
	- dark grey, fine to coarse grained			E	2.5	BH28-6
	End of Bore at 2.5 m	1.0				
3						
		0.0				
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: free ground water encountered at 2.1m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH29

Page No: 1 of 1

Date: 14 April 2022

Ground Surface Level: RL3.1m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	CONCRETE - 150mm	3.1				
	FILL			E	0.15	BH29-1
	- grey-brown, gravelly sand, fine to coarse grained sand, fine to coarse subangular gravel			E/P	0.25	BH29-2
					0.3	
					0.5	
				E	0.8	BH29-3
1		2.0			1.0	
	- brown, sand, fine to coarse grained			E	1.3	BH29-4
					1.5	
				E	1.8	BH29-5
2		1.0			2.0	
	SAND					
	- brown, fine to coarse grained			E	2.3	BH29-6
					2.5	
	End of Bore at 2.5 m					
3		0.0				
4		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: No free ground water encountered during drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH30

Page No: 1 of 1

Date: 14 April 2022

Ground Surface Level: RL3.2m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	CONCRETE - 120mm	3.2				
	FILL			E/A	0.12	BH30-1
	- grey-brown, gravelly sand, fine to coarse grained, fine to medium subangular gravel			E/P	0.25	BH30-2
					0.3	
					0.5	
	- grey-brown, gravelly clay, fine to coarse subangular gravel, traces of brick fragments			E	0.8	BH30-3
1					1.0	
	- brown, sand, fine to coarse grained	2.0		E	1.3	BH30-4
					1.5	
				E	1.8	BH30-5
2					2.0	
	- brown-grey, clayey sand, fine to coarse grained	1.0		E	2.3	BH30-6
					2.5	
	SAND			E	2.8	BH30-7
3	- brown, fine to coarse grained				3.0	
		0.0		E	3.3	BH30-8
					3.5	
	End of Bore at 3.5 m					
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 3.5m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH31

Page No: 1 of 1

Date: 14 April 2022

Ground Surface Level: RL3.5m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	CONCRETE - 150mm	3.5				
	FILL			E/A	0.15	BH31-1
	- brown, clayey sand, fine to coarse grained			E/P	0.25	
	- grey-brown, silty clay				0.3	BH31-2
	- grey mottled orange				0.5	
1				E	0.8	BH31-3
					1.0	
	- brown, sand, fine to coarse grained			E	1.3	BH31-4
					1.5	
2				E	1.8	BH31-5
					2.0	
	SAND			E	2.2	
	- brown, fine to coarse grained				2.3	BH31-6
					2.7	
3				E	3.0	BH31-7
	End of Bore at 3 m					
		0.0				
4						
		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.4m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

ENVIRONMENTAL BORE REPORT



Client: CBRE

Project: Industrial Site

Location: 89 Macarthur Avenue, Hamilton

Project No: 018-150M

BORE BH32

Page No: 1 of 1

Date: 14 April 2022

Ground Surface Level: RL3.1m*

Depth (m)	Description	RL (m)	Lithology	Sample Type	Sample Depth (m)	Sample ID
0	ASPHALT - 20mm	3.1				
	FILL			E/P	0.1	BH32-1
	- brown, gravelly sand, fine to coarse grained, fine to coarse subangular gravel				0.25	
	- dark grey, sand, fine to coarse grained			E/A	0.4	BH32-2
	- orange-brown				0.5	
	- brown, sand, fine to coarse grained			E	0.8	BH32-3
1		2.0			1.0	
				E	1.3	BH32-4
					1.5	
				E	1.8	BH32-5
2		1.0			2.0	
	SAND					
	- brown, fine to coarse grained			E	2.3	BH32-6
	End of Bore at 2.5 m				2.5	
3		0.0				
4		-1.0				
5						

D Disturbed Sample (ASS)

A Asbestos Sample

E Environmental Sample

() No Sample Recovery

C NMLC Coring

P PFAS Samples

This Environmental Bore Report is not intended for geotechnical engineering interpretation.

Rig: Geoprobe

Drilling Method: Auger

Groundwater: Free ground water encountered at 2.4m during auger drilling

Logged By: RP

Remarks: *Approximate ground surface level interpolated from Brisbane City Plan 2014

Notes on Description and Classification of Soil

The methods of description and classification of soils used in this report are generally based on Australian Standard AS1726-1993 Geotechnical Site Investigations.

Soil description is based on an assessment of disturbed samples, as recovered from bores and excavations, or from undisturbed materials as seen in excavations and exposures or in undisturbed samples. Descriptions given on report sheets are an interpretation of the conditions encountered at the time of investigation.

In the case of cone or piezocone penetrometer tests, actual soil samples are not recovered and soil description is inferred based on published correlations, past experience and comparison with bore and/or test pit data (if available).

Soil classification is based on the particle size distribution of the soil and the plasticity of the portion of the material finer than 0.425mm. The description of particle size distribution and plasticity is based on the results of visual field estimation, laboratory testing or both. When assessed in the field, the properties of the soil are estimated; precise description will always require laboratory testing to define soil properties.

Where soil can be clearly identified as FILL this will be noted as the main soil type followed by a description of the composition of the fill (e.g. FILL – yellow-brown, fine to coarse grained gravelly clay fill with concrete rubble). If the soil is assessed as possibly being fill this will be noted as an additional observation.

Soils are generally described using the following sequence of terms. In certain instances, not all of the terms will be included in the soil description.

MAIN SOIL TYPE (CLASSIFICATION GROUP SYMBOL)

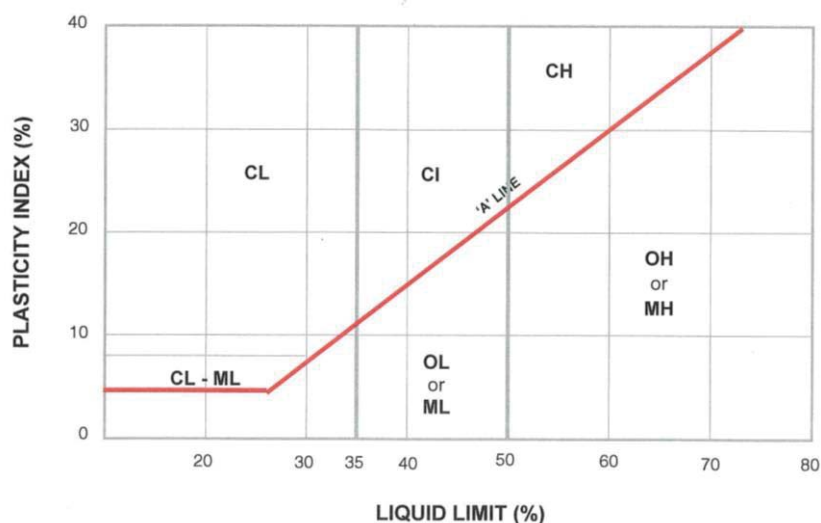
- strength/density, colour, structure/grain size, secondary and minor components, additional observations

Information on the definition of descriptive and classification terms follows.

SOIL TYPE and CLASSIFICATION GROUP SYMBOLS

	Major Divisions	Particle Size	Classification Group Symbol	Typical Names
COARSE GRAINED SOILS (more than half of material is larger than 0.075mm)	BOULDERS	>200mm		
	COBBLES	63 – 200mm		
	GRAVELS (more than half of coarse fraction is larger than 2.36mm)	Coarse: 20 – 63mm Medium: 6 – 20mm Fine: 2.36 – 6mm	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines, uniform gravels.
			GM	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravels, gravel-sand-clay mixtures.
	SANDS (more than half of coarse fraction is smaller than 2.36mm)	Coarse: 0.6 – 2.36mm Medium: 0.2 – 0.6mm Fine: 0.075 – 0.2mm	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands and gravelly sands; little or no fines, uniform sands.
			SM	Silty sands, sand-silt mixtures.
			SC	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS (more than half of material is smaller than 0.075mm)	SILTS & CLAYS (liquid limit <50%)		ML	Inorganic silts and very fine sands, silty/clayey fine sands or clayey silts with low plasticity.
			CL and CI	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS & CLAYS (liquid limit >50%)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils.
			CH	Inorganic clays of high plasticity.
			OH	Organic clays of medium to high plasticity, organic silts.
	HIGHLY ORGANIC SOILS		Pt	Peat and other highly organic soils.

PLASTICITY CHART FOR CLASSIFICATION OF FINE GRAINED SOILS



(Reference: Australian Standard AS1726-1993 Geotechnical site investigations)

DESCRIPTIVE TERMS FOR MATERIAL PROPORTIONS

Coarse Grained Soils		Fine Grained Soils	
% Fines	Modifier	% Coarse	Modifier
<5	Omit, or use 'trace'	<15	Omit, or use trace.
5 – 12	Describe as 'with clay/silt' as applicable.	15 – 30	Describe as 'with sand/gravel' as applicable.
>12	Prefix soil as 'silty/clayey' as applicable	>30	Prefix soil as 'sandy/gravelly' as applicable.

STRENGTH TERMS – COHESIVE SOILS

Strength Term	Undrained Shear Strength	Field Guide to Strength
Very soft	<12kPa	Exudes between the fingers when squeezed in hand.
Soft	12 – 25kPa	Can be moulded by light finger pressure.
Firm	25 – 50kPa	Can be moulded by strong finger pressure.
Stiff	50 – 100kPa	Cannot be moulded by fingers, can be indented by thumb.
Very stiff	100 – 200kPa	Can be indented by thumb nail.
Hard	>200kPa	Can be indented with difficulty by thumb nail.

DENSITY TERMS – NON COHESIVE SOILS

Density Term	Density Index	SPT "N"	CPT Cone Resistance
Very loose	<15%	0 – 5	0 – 2MPa
Loose	15 – 35%	5 – 10	2 – 5MPa
Medium dense	35 – 65%	10 – 30	5 – 15MPa
Dense	65 – 85%	30 – 50	15 – 25MPa
Very dense	>85%	>50	>25MPa

COLOUR

The colour of a soil will generally be described in a 'moist' condition using simple colour terms (e.g. black, grey, red, brown etc.) modified as necessary by "pale", "dark", "light" or "mottled". Borderline colours will be described as a combination of colours (e.g. grey-brown).

EXAMPLE

e.g. CLAYEY SAND (SC) – medium dense, grey-brown, fine to medium grained with silt.

Indicates a medium dense, grey-brown, fine to medium grained clayey sand with silt.

Notes on Description and Classification of Rock

The methods of description and classification of rock used in this report are generally based on Australian Standard AS1726-1993 *Geotechnical site investigations*.

Rock description is based on an assessment of disturbed samples, as recovered from bores and excavations, or from undisturbed materials as seen in excavations and exposures, or in core samples. Descriptions given on report sheets are an interpretation of the conditions encountered at the time of investigation.

Notes outlining the method and terminology adopted for the description of rock defects are given below, however, detailed information on defects can generally only be determined where rock core is taken, or excavations or exposures allow detailed observation and measurement.

Rocks are generally described using the following sequence of terms. In certain instances not all of the terms will be included in the rock description.

ROCK TYPE (WEATHERING SYMBOL), strength, colour, grain size, defect frequency

Information on the definition of descriptive and classification terms follows.

ROCK TYPE

In general, simple rock names are used rather than precise geological classifications.

ROCK MATERIALS WEATHERING CLASSIFICATION

Term	Weathering Symbol	Definition
Residual soil	RS	Soil developed from extremely weathered rock; the mass structure and substance fabrics are no longer evident; there is a large change in volume but the soil has not been significantly transported.
Extremely weathered	XW	Rock is weathered to such an extent that it has 'soil' properties, i.e. it either disintegrates or can be remoulded in water.
Distinctly weathered *	DW	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by ironstaining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
- Highly weathered	HW	Rock substance affected by weathering to the extent that limonite staining or bleaching affects the whole of the rock substance and other signs of chemical or physical decomposition are evident. Porosity and strength may be increased or decreased compared to the fresh rock, usually as a result of iron leaching or deposition. The colour and strength of the original fresh rock substance is no longer recognisable.
- Moderately weathered	MW	Rock substance affected by weathering to the extent that staining extends throughout the whole of the rock substance and the original colour of the fresh rock may be no longer recognisable.
Slightly weathered	SW	Rock is slightly discoloured but shows little or no change of strength from fresh rock.
Fresh	FR	Rock shows no sign of decomposition or staining.

* Subdivision of this weathering grade into highly and moderately may be used where applicable.

STRENGTH OF ROCK MATERIAL

Term	Symbol	Point Load Index I_s (50)	Field Guide To Strength
Extremely low	EL	<0.03MPa	Easily remoulded by hand to a material with soil properties.
Very low	VL	0.03 – 0.1MPa	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 30mm thick can be broken by finger pressure.
Low	L	0.1 – 0.3MPa	Easily scored with a knife; indentations 1mm to 3mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150mm long 50mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium	M	0.3 – 1.0MPa	Readily scored with a knife; a piece of core 150mm long by 50mm diameter can be broken by hand with difficulty.
High	H	1.0 – 3.0MPa	A piece of core 150mm long by 50mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very high	VH	3.0 – 10.0MPa	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely high	EH	>10MPa	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

Notes:

- These terms refer to the strength of the rock material and not to the strength of the rock mass which may be considerably weaker due to the effect of rock defects.
- The field guide visual assessment for rock strength may be used for preliminary assessment or when point load testing is not available.
- Anisotropy of rock may affect the field assessment of strength.

COLOUR

The colour of a rock will generally be described in a 'moist' condition using simple colour terms (e.g. black, grey, red, brown, etc) modified as necessary by 'pale', 'dark', 'light' or 'mottled'. Borderline colours will be described as a combination of colours (e.g. grey-brown).

GRAIN SIZE

Descriptive Term	Particle Size Range
Coarse grained	0.6 – 2.0mm
Medium grained	0.2 – 0.6mm
Fine grained	0.06 – 0.2mm

DEFECT FREQUENCY

Where appropriate, a defect frequency may be recorded as part of the rock description and will be expressed as the number of natural (or interpreted natural) defects present in an equivalent one metre length of core; by use of the following defect frequency descriptive terms; or both. The descriptive terms refer to the spacing of all types of natural defects along which the rock is discontinuous and include, bedding plane partings, joints and other rock defects, but excludes known artificial fractures such as drilling breaks.

Defect Frequency	Description
Fragmented	Rock core is comprised primarily of fragments of length less than 20mm, and mostly of width less than the core diameter.
Highly Fractured	Core lengths are generally less than 20mm to 40mm with occasional fragments.
Fractured	Core lengths are mainly 30mm to 100mm with occasional shorter and longer sections.
Fractured to Slightly Fractured	Core lengths are mainly 100mm to 300mm with occasional shorter to longer sections.
Slightly Fractured	Core lengths are generally 300mm to 1,000mm with occasional longer sections and occasional sections of 100mm to 300mm.
Unbroken	The core does not contain any fractures.

EXAMPLE

e.g. SANDSTONE (XW) – low strength, pale brown, fine to coarse grained, slightly fractured.

ROCK DEFECT LOGGING

Defects are discontinuities in the rock mass and include joints, sheared zones, cleavages and bedding partings. The ability to observe and log defects will depend on the investigation methodology. Defects logged in core are described using the abbreviations noted in the following tables.

The *depth* noted in the description is measured in metres from the ground surface, the *defect angle* is measured in degrees from horizontal, and the defect *thickness* is measured normal to the plane of the defect and is in millimetres (unless otherwise noted).

Defects are generally described using the following sequence of terms:

Depth, Defect Type, Defect Angle (dip), Surface Roughness, Infill, Thickness

DEFECT TYPE

B	– Bedding
J	– Joint
S	– Shear Zone
C	– Crushed Zone

SURFACE ROUGHNESS

i	- rough or irregular, stepped
ii	- smooth, stepped
iii	- slickensided, stepped
iv	- rough or irregular, undulating
v	- smooth, undulating
vi	- slickensided, undulating
vii	- rough or irregular, planar
viii	- smooth planar
ix	- slickensided, planar

INFILL

Infill refers to secondary minerals or other materials formed on the surface of the defect and some common descriptions are given in the following table together with their abbreviations.

Ls	- limonite staining
Fe	- iron staining
Cl	- clay
Mn	- manganese staining
Qtz	- quartz
Ca	- calcite
Clean	- no visible infill

EXAMPLE

3.59m, J, 90, vii, Ls, 1mm

indicates a joint at 3.59m depth that is at 90° to horizontal (i.e. vertical), is rough or irregular and planar, limonite stained and 1mm thick.



APPENDIX C

SOIL INVESTIGATION LABORATORY DOCUMENTATION AND RPDS





Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EB2210676	Page	: 1 of 29
Client	: BUTLER PARTNERS PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MS SUZANNE WALKER	Contact	: Kimberly Hilton-Barber
Address	: PO BOX 2267 FORTITUDE VALLEY BC QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3852 3800	Telephone	: +61-7-3243 7222
Project	: 018-150M	Date Samples Received	: 14-Apr-2022 19:15
Order number	: BP202052	Date Analysis Commenced	: 20-Apr-2022
C-O-C number	: 1	Issue Date	: 28-Apr-2022 16:26
Sampler	: RICHARD PEARCE		
Site	: 89 Macarthur Ave, Hamilton		
Quote number	: EN/222 (Planned event Tables)		
No. of samples received	: 102		
No. of samples analysed	: 39		



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
Mark Hallas	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
Sarah Ashworth	Laboratory Manager - Brisbane	Brisbane Organics, Stafford, QLD



Page : 2 of 29
Work Order : EB2210676
Client : BUTLER PARTNERS PTY LTD
Project : 018-150M

General Comments

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

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders EB2210676/ EB2210677 due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on ALSEnviro.Brisbane@alsglobal.com**
- 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+i) & 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.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above 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.
- EP231X PFAS: The LORs of PFBA and PFPeA for sample "BH03-1" have been raised due to sample matrix interferences.
- EG035T (Total Mercury): The high failing laboratory control standard is deemed acceptable as all results are less than the limit of reporting.
- EG005T (Total Metals by ICP-AES): EB2210636-002 shows poor matrix spike recovery due to sample heterogeneity. This has been confirmed by visual inspection.
- EG005T (Total Metals by ICP-AES): BH07-1 (EB2210676-050) shows poor duplicate results due to sample heterogeneity. This has been confirmed by visual inspection.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID						
		Sampling date / time		Sample ID				
Compound	CAS Number	LOR	Unit	BH01-1	BH01-2	BH01-3	BH02-1	BH02-2
				12-Apr-2022 00:00 EB2210676-001	12-Apr-2022 00:00 EB2210676-002	12-Apr-2022 00:00 EB2210676-003	12-Apr-2022 00:00 EB2210676-006	12-Apr-2022 00:00 EB2210676-007
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content		0.1	%	5.2				26.5
Moisture Content		1.0	%		9.1	24.4	8.4	
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic		7440-38-2	5	mg/kg		<5	8	
Cadmium		7440-43-9	1	mg/kg		<1	1	<1
Chromium		7440-47-3	2	mg/kg		17	60	10
Copper		7440-50-8	5	mg/kg		25	9	8
Lead		7439-92-1	5	mg/kg		25	6	7
Nickel		7440-02-0	2	mg/kg		7	3	3
Zinc		7440-66-6	5	mg/kg		152	18	18
EG035T: Total Recoverable Mercury by FIMS								
Mercury		7439-97-6	0.1	mg/kg		<0.1	<0.1	
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls			0.1	mg/kg			<0.1	
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC		319-84-6	0.05	mg/kg	<0.05			<0.05
Hexachlorobenzene (HCB)		118-74-1	0.05	mg/kg	<0.05			<0.05
beta-BHC		319-85-7	0.05	mg/kg	<0.05			<0.05
gamma-BHC		58-89-9	0.05	mg/kg	<0.05			<0.05
delta-BHC		319-86-8	0.05	mg/kg	<0.05			<0.05
Heptachlor		76-44-8	0.05	mg/kg	<0.05			<0.05
Aldrin		309-00-2	0.05	mg/kg	<0.05			<0.05
Heptachlor epoxide		1024-57-3	0.05	mg/kg	<0.05			<0.05
^ Total Chlordane (sum)			0.05	mg/kg	<0.05			<0.05
trans-Chlordane		5103-74-2	0.05	mg/kg	<0.05			<0.05
alpha-Endosulfan		959-98-8	0.05	mg/kg	<0.05			<0.05
cis-Chlordane		5103-71-9	0.05	mg/kg	<0.05			<0.05
Dieldrin		60-57-1	0.05	mg/kg	<0.05			<0.05
4,4'-DDE		72-55-9	0.05	mg/kg	<0.05			<0.05
Endrin		72-20-8	0.05	mg/kg	<0.05			<0.05
beta-Endosulfan		33213-65-9	0.05	mg/kg	<0.05			<0.05
^ Endosulfan (sum)		115-29-7	0.05	mg/kg	<0.05			<0.05
4,4'-DDD		72-54-8	0.05	mg/kg	<0.05			<0.05
Endrin aldehyde		7421-93-4	0.05	mg/kg	<0.05			<0.05



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH01-1		BH01-2		BH01-3		BH02-1		BH02-2	
Compound	CAS Number	LOR	Unit	Sampling date / time	Result	Result	Result	Result	Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued													
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05								
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2								<0.05
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05								<0.2
Methoxychlor	72-43-5	0.2	mg/kg		<0.2								<0.05
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05								<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05	mg/kg		<0.05								<0.05
0-2													
EP231A: Perfluoroalkyl Sulfonic Acids													
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002								
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002								
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002								
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002								
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		0.0004								
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002								
EP231B: Perfluoroalkyl Carboxylic Acids													
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001								
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002								
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002								
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002								
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002								
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		0.0008								
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002								
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002								
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002								
Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.0002	mg/kg		<0.0002								



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID			BH01-1	BH01-2	BH01-3	BH02-1	BH02-2
Compound	CAS Number	LOR	Sampling date / time		12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00
				Unit	EB2210676-001	EB2210676-002	EB2210676-003	EB2210676-006	EB2210676-007
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005				
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002				
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005				
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005				
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005				
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005				
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002				
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002				
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005				
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005				
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005				
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005				
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		0.0012				
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		0.0004				
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		0.0004				
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----			26.9	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH01-1		BH01-2		BH01-3		BH02-1		BH02-2	
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate													
Dibromo-DDE	21655-73-2	0.05		%	104								
EP068T: Organophosphorus Pesticide Surrogate													
DEF	78-48-8	0.05		%	134								
EP231S: PFAS Surrogate													
13C4-PFOS		0.0002		%	108								
13C8-PFOA		0.0002		%	112								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH02-3	BH02-5	BH02-7	BH03-1	BH03-2
Compound	CAS Number	Sampling date / time		12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00
		LOR	Unit	EB2210676-008	EB2210676-010	EB2210676-012	EB2210676-018	EB2210676-019
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content		0.1	%				30.5	
Moisture Content		1.0	%	9.9	5.0	5.1		12.2
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	5	<5	<5	63	140
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	8	7	6	8
Copper	7440-50-8	5	mg/kg	13	<5	<5	72	66
Lead	7439-92-1	5	mg/kg	25	<5	<5	54	68
Nickel	7440-02-0	2	mg/kg	11	8	5	10	11
Zinc	7440-66-6	5	mg/kg	55	16	10	93	73
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg					<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg					<0.05
beta-BHC	319-85-7	0.05	mg/kg					<0.05
gamma-BHC	58-89-9	0.05	mg/kg					<0.05
delta-BHC	319-86-8	0.05	mg/kg					<0.05
Heptachlor	76-44-8	0.05	mg/kg					<0.05
Aldrin	309-00-2	0.05	mg/kg					<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg					<0.05
^ Total Chlordane (sum)		0.05	mg/kg					<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg					<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg					<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg					<0.05
Dieldrin	60-57-1	0.05	mg/kg					<0.05
4,4'-DDE	72-55-9	0.05	mg/kg					<0.05
Endrin	72-20-8	0.05	mg/kg					<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg					<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg					<0.05
4,4'-DDD	72-54-8	0.05	mg/kg					<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg					<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg					<0.05
4,4'-DDT	50-29-3	0.2	mg/kg					<0.2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)					
Compound	CAS Number	LOR	Sample ID		
			Sampling date / time		
BH02-3	BH02-5	BH02-7	BH03-1	BH03-2	
12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	
EB2210676-008	EB2210676-010	EB2210676-012	EB2210676-018	EB2210676-019	
Result	Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued					
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2
^ Sum of Aldrin + Dieldrin	309-00-2 60-57-1	0.05	mg/kg		<0.05
^ Sum of DDD + DDE + DDT	72-54-8 72-55-9 5-0-2	0.05	mg/kg		<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons					
Naphthalene	91-20-3	0.5	mg/kg		<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5
Phenanthrene	85-01-8	0.5	mg/kg		0.6
Anthracene	120-12-7	0.5	mg/kg		<0.5
Fluoranthene	206-44-0	0.5	mg/kg		0.8
Pyrene	129-00-0	0.5	mg/kg		0.7
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5
Benzo(b+)fluoranthene	205-99-2	0.5	mg/kg		<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5
Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5
^ Sum of polycyclic aromatic hydrocarbons					
^ Benzo(a)pyrene TEQ (zero)		0.5	mg/kg		2.1
^ Benzo(a)pyrene TEQ (half LOR)		0.5	mg/kg		<0.5
^ Benzo(a)pyrene TEQ (LOR)		0.5	mg/kg		0.6
EP080/071: Total Petroleum Hydrocarbons					
C6 - C9 Fraction		10	mg/kg		<10
C10 - C14 Fraction		50	mg/kg		<50
C15 - C28 Fraction		100	mg/kg		160
C29 - C36 Fraction		100	mg/kg		110
^ C10 - C36 Fraction (sum)		50	mg/kg		270
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions					
C6 - C10 Fraction	C6_C10	10	mg/kg		<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH02-3		BH02-5		BH02-7		BH03-1		BH03-2	
		Sampling date / time		12-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00	
Compound		CAS Number	LOR	Unit	EB2210676-008	EB2210676-010	EB2210676-012	EB2210676-018	EB2210676-019				
					Result	Result	Result	Result	Result				
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued													
^ C6 - C10 Fraction minus BTEX (F1)		C6_C10-BTEX	10	mg/kg				<10					
>C10 - C16 Fraction			50	mg/kg				<50					
>C16 - C34 Fraction			100	mg/kg				230					
>C34 - C40 Fraction			100	mg/kg				<100					
^ >C10 - C40 Fraction (sum)			50	mg/kg				230					
^ >C10 - C16 Fraction minus Naphthalene (F2)			50	mg/kg				<50					
EP080: BTEXN													
Benzene		71-43-2	0.2	mg/kg				<0.2					
Toluene		108-88-3	0.5	mg/kg				<0.5					
Ethylbenzene		100-41-4	0.5	mg/kg				<0.5					
meta- & para-Xylene		108-38-3 106-42-3	0.5	mg/kg				<0.5					
ortho-Xylene		95-47-6	0.5	mg/kg				<0.5					
^ Sum of BTEX			0.2	mg/kg				<0.2					
^ Total Xylenes			0.5	mg/kg				<0.5					
Naphthalene		91-20-3	1	mg/kg				<1					
EP231A: Perfluoroalkyl Sulfonic Acids													
Perfluorobutane sulfonic acid (PFBS)		375-73-5	0.0002	mg/kg				<0.0002					
Perfluoropentane sulfonic acid (PFPeS)		2706-91-4	0.0002	mg/kg				<0.0002					
Perfluorohexane sulfonic acid (PFHxS)		355-46-4	0.0002	mg/kg				<0.0002					
Perfluoroheptane sulfonic acid (PFHpS)		375-92-8	0.0002	mg/kg				<0.0002					
Perfluorooctane sulfonic acid (PFOS)		1763-23-1	0.0002	mg/kg				0.0010					
Perfluorodecane sulfonic acid (PFDS)		335-77-3	0.0002	mg/kg				<0.0002					
EP231B: Perfluoroalkyl Carboxylic Acids													
Perfluorobutanoic acid (PFBA)		375-22-4	0.001	mg/kg				<0.002					
Perfluoropentanoic acid (PFPeA)		2706-90-3	0.0002	mg/kg				<0.0004					
Perfluorohexanoic acid (PFHxA)		307-24-4	0.0002	mg/kg				<0.0002					
Perfluoroheptanoic acid (PFHpA)		375-85-9	0.0002	mg/kg				<0.0002					



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID				BH02-3		BH02-5		BH02-7		BH03-1		BH03-2	
		Sampling date / time				12-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	Result	EB2210676-008	Result	EB2210676-010	Result	EB2210676-012	Result	EB2210676-018	Result	EB2210676-019	Result	
EP231B: Perfluoroalkyl Carboxylic Acids - Continued															
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0002	-----	-----		
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0002	-----	-----		
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0002	-----	-----		
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0002	-----	-----		
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0002	-----	-----		
Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.0002	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0002	-----	-----		
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0005	-----	-----		
EP231C: Perfluoroalkyl Sulfonamides															
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0002	-----	-----		
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0005	-----	-----		
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0005	-----	-----		
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0005	-----	-----		
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0005	-----	-----		
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0002	-----	-----		
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0002	-----	-----		
EP231D: (n:2) Fluorotelomer Sulfonic Acids															
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0005	-----	-----		
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0005	-----	-----		
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	-----	-----	-----	-----	-----	-----	-----	<0.0005	-----	-----		



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH02-3		BH02-5		BH02-7		BH03-1		BH03-2	
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued													
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005		mg/kg	-----	-----	-----	-----	-----	<0.0005	-----	-----	-----
EP231P: PFAS Sums													
Sum of PFAS	-----	0.0002		mg/kg	-----	-----	-----	-----	-----	0.0010	-----	-----	-----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002		mg/kg	-----	-----	-----	-----	-----	0.0010	-----	-----	-----
Sum of PFAS (WA DER List)	-----	0.0002		mg/kg	-----	-----	-----	-----	-----	0.0010	-----	-----	-----
EP068S: Organochlorine Pesticide Surrogate													
Dibromo-DDE	21655-73-2	0.05		%	-----	-----	-----	-----	-----	-----	-----	-----	108
EP068T: Organophosphorus Pesticide Surrogate													
DEF	78-48-8	0.05		%	-----	-----	-----	-----	-----	-----	-----	-----	131
EP075(SIM)S: Phenolic Compound Surrogates													
Phenol-d6	13127-88-3	0.5		%	-----	-----	-----	-----	-----	107	-----	-----	108
2-Chlorophenol-D4	93951-73-6	0.5		%	-----	-----	-----	-----	-----	102	-----	-----	111
2,4,6-Tribromophenol	118-79-6	0.5		%	-----	-----	-----	-----	-----	90.3	-----	-----	86.4
EP075(SIM)T: PAH Surrogates													
2-Fluorobiphenyl	321-60-8	0.5		%	-----	-----	-----	-----	-----	101	-----	-----	103
Anthracene-d10	1719-06-8	0.5		%	-----	-----	-----	-----	-----	102	-----	-----	102
4-Terphenyl-d14	1718-51-0	0.5		%	-----	-----	-----	-----	-----	106	-----	-----	108
EP080S: TPH(V)/BTEX Surrogates													
1,2-Dichloroethane-D4	17060-07-0	0.2		%	-----	-----	-----	-----	-----	108	-----	-----	-----
Toluene-D8	2037-26-5	0.2		%	-----	-----	-----	-----	-----	89.2	-----	-----	-----
4-Bromofluorobenzene	460-00-4	0.2		%	-----	-----	-----	-----	-----	99.3	-----	-----	-----
EP231S: PFAS Surrogate													
13C4-PFOS	-----	0.0002		%	-----	-----	-----	-----	-----	104	-----	-----	-----
13C8-PFOA	-----	0.0002		%	-----	-----	-----	-----	-----	106	-----	-----	-----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		Sampling date / time		BH03-4		BH03-6		BH04-1		BH04-2		BH04-4	
						12-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	Result		EB2210676-021		EB2210676-023		EB2210676-028		EB2210676-029		EB2210676-031	
EA055: Moisture Content (Dried @ 105-110°C)															
Moisture Content		0.1	%							15.1					
Moisture Content		1.0	%	7.0				23.1				23.0		13.4	
EG005(ED093)T: Total Metals by ICP-AES															
Arsenic	7440-38-2	5	mg/kg	<5				5				14		<5	
Cadmium	7440-43-9	1	mg/kg	<1				<1				<1		<1	
Chromium	7440-47-3	2	mg/kg	9				18				8		8	
Copper	7440-50-8	5	mg/kg	6				10				11		<5	
Lead	7439-92-1	5	mg/kg	<5				<5				47		<5	
Nickel	7440-02-0	2	mg/kg	8				13				2		7	
Zinc	7440-66-6	5	mg/kg	20				29				26		14	
EG035T: Total Recoverable Mercury by FIMS															
Mercury	7439-97-6	0.1	mg/kg	<0.1				<0.1				0.2		<0.1	
EP068A: Organochlorine Pesticides (OC)															
alpha-BHC	319-84-6	0.05	mg/kg							<0.05					
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg							<0.05					
beta-BHC	319-85-7	0.05	mg/kg							<0.05					
gamma-BHC	58-89-9	0.05	mg/kg							<0.05					
delta-BHC	319-86-8	0.05	mg/kg							<0.05					
Heptachlor	76-44-8	0.05	mg/kg							<0.05					
Aldrin	309-00-2	0.05	mg/kg							<0.05					
Heptachlor epoxide	1024-57-3	0.05	mg/kg							<0.05					
^ Total Chlordane (sum)		0.05	mg/kg							<0.05					
trans-Chlordane	5103-74-2	0.05	mg/kg							<0.05					
alpha-Endosulfan	959-98-8	0.05	mg/kg							<0.05					
cis-Chlordane	5103-71-9	0.05	mg/kg							<0.05					
Dieldrin	60-57-1	0.05	mg/kg							<0.05					
4,4'-DDE	72-55-9	0.05	mg/kg							<0.05					
Endrin	72-20-8	0.05	mg/kg							<0.05					
beta-Endosulfan	33213-65-9	0.05	mg/kg							<0.05					
^ Endosulfan (sum)	115-29-7	0.05	mg/kg							<0.05					
4,4'-DDD	72-54-8	0.05	mg/kg							<0.05					
Endrin aldehyde	7421-93-4	0.05	mg/kg							<0.05					
Endosulfan sulfate	1031-07-8	0.05	mg/kg							<0.05					
4,4'-DDT	50-29-3	0.2	mg/kg							<0.2					

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH03-4		BH03-6		BH04-1		BH04-2		BH04-4	
Compound	CAS Number	LOR	Sampling date / time	Unit	Result		Result		Result		Result		
					EB2210676-021	EB2210676-023	EB2210676-028	EB2210676-029	EB2210676-031				
EP068A: Organochlorine Pesticides (OC) - Continued													
Endrin ketone	53494-70-5	0.05		mg/kg				<0.05					
Methoxychlor	72-43-5	0.2		mg/kg				<0.2					
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05		mg/kg				<0.05					
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05		mg/kg				<0.05					
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons													
Naphthalene	91-20-3	0.5		mg/kg							<0.5		
Acenaphthylene	208-96-8	0.5		mg/kg							<0.5		
Acenaphthene	83-32-9	0.5		mg/kg							<0.5		
Fluorene	86-73-7	0.5		mg/kg							<0.5		
Phenanthrene	85-01-8	0.5		mg/kg							<0.5		
Anthracene	120-12-7	0.5		mg/kg							<0.5		
Fluoranthene	206-44-0	0.5		mg/kg							<0.5		
Pyrene	129-00-0	0.5		mg/kg							<0.5		
Benz(a)anthracene	56-55-3	0.5		mg/kg							<0.5		
Chrysene	218-01-9	0.5		mg/kg							<0.5		
Benzo(b+)fluoranthene	205-99-2	0.5		mg/kg							<0.5		
Benzo(k)fluoranthene	207-08-9	0.5		mg/kg							<0.5		
Benzo(a)pyrene	50-32-8	0.5		mg/kg							<0.5		
Indeno(1,2,3.cd)pyrene	193-39-5	0.5		mg/kg							<0.5		
Dibenz(a,h)anthracene	53-70-3	0.5		mg/kg							<0.5		
Benzo(g,h,i)perylene	191-24-2	0.5		mg/kg							<0.5		
^ Sum of polycyclic aromatic hydrocarbons					0.5	mg/kg					<0.5		
^ Benzo(a)pyrene TEQ (zero)					0.5	mg/kg					<0.5		
^ Benzo(a)pyrene TEQ (half LOR)					0.5	mg/kg					0.6		
^ Benzo(a)pyrene TEQ (LOR)					0.5	mg/kg					1.2		
EP080/071: Total Petroleum Hydrocarbons													
C6 - C9 Fraction					10	mg/kg					<10		
C10 - C14 Fraction					50	mg/kg					<50		
C15 - C28 Fraction					100	mg/kg					<100		
C29 - C36 Fraction					100	mg/kg					<100		
^ C10 - C36 Fraction (sum)					50	mg/kg					<50		
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions													
C6 - C10 Fraction					C6_C10	10	mg/kg				<10		



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH03-4	BH03-6	BH04-1	BH04-2	BH04-4
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ C6 - C10 Fraction minus BTEX (F1)		C6_C10-BTEX	10	mg/kg			<10	
>C10 - C16 Fraction			50	mg/kg			<50	
>C16 - C34 Fraction			100	mg/kg			<100	
>C34 - C40 Fraction			100	mg/kg			<100	
^ >C10 - C40 Fraction (sum)			50	mg/kg			<50	
^ >C10 - C16 Fraction minus Naphthalene (F2)			50	mg/kg			<50	
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg				<0.2	
Toluene	108-88-3	0.5	mg/kg				<0.5	
Ethylbenzene	100-41-4	0.5	mg/kg				<0.5	
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg				<0.5	
ortho-Xylene	95-47-6	0.5	mg/kg				<0.5	
^ Sum of BTEX		0.2	mg/kg				<0.2	
^ Total Xylenes		0.5	mg/kg				<0.5	
Naphthalene	91-20-3	1	mg/kg				<1	
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%			106		
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%			132		
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%				104	
2-Chlorophenol-D4	93951-73-6	0.5	%				99.9	
2,4,6-Tribromophenol	118-79-6	0.5	%				96.1	
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%				92.5	
Anthracene-d10	1719-06-8	0.5	%				110	
4-Terphenyl-d14	1718-51-0	0.5	%				83.7	
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%				108	
Toluene-D8	2037-26-5	0.2	%				75.3	
4-Bromofluorobenzene	460-00-4	0.2	%				95.1	

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH05-1		BH05-2		BH06-1		BH06-2		BH06-4	
Compound	CAS Number	Sampling date / time		LOR	Unit	Result		Result		Result		Result	
EA055: Moisture Content (Dried @ 105-110°C)													
Moisture Content	----			0.1	%	4.1							
Moisture Content	-----			1.0	%			4.1		6.0		5.2	
EG005(ED093)T: Total Metals by ICP-AES													
Arsenic	7440-38-2			5	mg/kg			12		<5		<5	
Cadmium	7440-43-9			1	mg/kg			<1		<1		<1	
Chromium	7440-47-3			2	mg/kg			15		33		6	
Copper	7440-50-8			5	mg/kg			13		6		<5	
Lead	7439-92-1			5	mg/kg			14		13		10	
Nickel	7440-02-0			2	mg/kg			4		3		4	
Zinc	7440-66-6			5	mg/kg			35		35		34	
EG035T: Total Recoverable Mercury by FIMS													
Mercury	7439-97-6			0.1	mg/kg			<0.1		<0.1		<0.1	
EP068A: Organochlorine Pesticides (OC)													
alpha-BHC	319-84-6			0.05	mg/kg					<0.05			
Hexachlorobenzene (HCB)	118-74-1			0.05	mg/kg					<0.05			
beta-BHC	319-85-7			0.05	mg/kg					<0.05			
gamma-BHC	58-89-9			0.05	mg/kg					<0.05			
delta-BHC	319-86-8			0.05	mg/kg					<0.05			
Heptachlor	76-44-8			0.05	mg/kg					<0.05			
Aldrin	309-00-2			0.05	mg/kg					<0.05			
Heptachlor epoxide	1024-57-3			0.05	mg/kg					<0.05			
^ Total Chlordane (sum)	-----			0.05	mg/kg					<0.05			
trans-Chlordane	5103-74-2			0.05	mg/kg					<0.05			
alpha-Endosulfan	959-98-8			0.05	mg/kg					<0.05			
cis-Chlordane	5103-71-9			0.05	mg/kg					<0.05			
Dieldrin	60-57-1			0.05	mg/kg					<0.05			
4,4'-DDE	72-55-9			0.05	mg/kg					<0.05			
Endrin	72-20-8			0.05	mg/kg					<0.05			
beta-Endosulfan	33213-65-9			0.05	mg/kg					<0.05			
^ Endosulfan (sum)	115-29-7			0.05	mg/kg					<0.05			
4,4'-DDD	72-54-8			0.05	mg/kg					<0.05			
Endrin aldehyde	7421-93-4			0.05	mg/kg					<0.05			
Endosulfan sulfate	1031-07-8			0.05	mg/kg					<0.05			
4,4'-DDT	50-29-3			0.2	mg/kg					<0.2			



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH05-1		BH05-2		BH06-1		BH06-2		BH06-4	
Compound	CAS Number	LOR	Unit	Sampling date / time	Result	Result	Result	Result	Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued													
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05				<0.05				
Methoxychlor	72-43-5	0.2	mg/kg		<0.2				<0.2				
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05				<0.05				
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05	mg/kg		<0.05				<0.05				
	0-2												
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons													
Naphthalene	91-20-3	0.5	mg/kg						<0.5				
Acenaphthylene	208-96-8	0.5	mg/kg						<0.5				
Acenaphthene	83-32-9	0.5	mg/kg						<0.5				
Fluorene	86-73-7	0.5	mg/kg						<0.5				
Phenanthrene	85-01-8	0.5	mg/kg						<0.5				
Anthracene	120-12-7	0.5	mg/kg						<0.5				
Fluoranthene	206-44-0	0.5	mg/kg						<0.5				
Pyrene	129-00-0	0.5	mg/kg						<0.5				
Benz(a)anthracene	56-55-3	0.5	mg/kg						<0.5				
Chrysene	218-01-9	0.5	mg/kg						<0.5				
Benzo(b+)fluoranthene	205-99-2	0.5	mg/kg						<0.5				
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg						<0.5				
Benzo(a)pyrene	50-32-8	0.5	mg/kg						<0.5				
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg						<0.5				
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg						<0.5				
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg						<0.5				
^ Sum of polycyclic aromatic hydrocarbons													
^ Benzo(a)pyrene TEQ (zero)													
^ Benzo(a)pyrene TEQ (half LOR)													
^ Benzo(a)pyrene TEQ (LOR)													
EP080/071: Total Petroleum Hydrocarbons													
C6 - C9 Fraction		10	mg/kg						<10				
C10 - C14 Fraction		50	mg/kg						<50				
C15 - C28 Fraction		100	mg/kg						<100				
C29 - C36 Fraction		100	mg/kg						<100				
^ C10 - C36 Fraction (sum)		50	mg/kg						<50				
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions													
C6 - C10 Fraction	C6_C10	10	mg/kg						<10				



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID			BH07-1		BH07-2		BH07-4		BH08-1		BH08-3	
		Sampling date / time			12-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	Result	EB2210676-050	Result	EB2210676-051	Result	EB2210676-053	Result	EB2210676-060	Result	EB2210676-062	Result
EA055: Moisture Content														
Moisture Content		----	1.0	%	16.7	----	----	----	----	----	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)														
Moisture Content		----	1.0	%	----	----	3.6	----	12.2	----	8.6	----	4.2	----
EG005(ED093)T: Total Metals by ICP-AES														
Arsenic	7440-38-2	5	mg/kg	24	17	5	<5	<5						
Cadmium	7440-43-9	1	mg/kg	1	7	<1								
Chromium	7440-47-3	2	mg/kg	7	17	9	7	10						
Copper	7440-50-8	5	mg/kg	16	38	<5								
Lead	7439-92-1	5	mg/kg	26	2									
Nickel	7440-02-0	2	mg/kg	<2	91	28								
Zinc	7440-66-6	5	mg/kg											
EG035T: Total Recoverable Mercury by FIMS														
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1								
EP068A: Organochlorine Pesticides (OC)														
alpha-BHC	319-84-6	0.05	mg/kg	<0.05										
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05										
beta-BHC	319-85-7	0.05	mg/kg	<0.05										
gamma-BHC	58-89-9	0.05	mg/kg	<0.05										
delta-BHC	319-86-8	0.05	mg/kg	<0.05										
Heptachlor	76-44-8	0.05	mg/kg	<0.05										
Aldrin	309-00-2	0.05	mg/kg	<0.05										
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05										
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05										
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05										
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05										
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05										
Dieldrin	60-57-1	0.05	mg/kg	<0.05										
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05										
Endrin	72-20-8	0.05	mg/kg	<0.05										
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05										
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05										
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05										
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05										
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05										

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID		BH07-1		BH07-2		BH07-4		BH08-1		BH08-3	
Compound	CAS Number	LOR	Sampling date / time		12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	12-Apr-2022 00:00	
			Unit	Result	EB2210676-050	EB2210676-051	EB2210676-053	EB2210676-060	EB2210676-062					
EP068A: Organochlorine Pesticides (OC) - Continued														
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2									<0.2	
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05									<0.05	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2									<0.2	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05									<0.05	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05	mg/kg	<0.05									<0.05	
	0-2													
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons														
Naphthalene	91-20-3	0.5	mg/kg										<0.5	
Acenaphthylene	208-96-8	0.5	mg/kg										<0.5	
Acenaphthene	83-32-9	0.5	mg/kg										<0.5	
Fluorene	86-73-7	0.5	mg/kg										<0.5	
Phenanthrene	85-01-8	0.5	mg/kg										<0.5	
Anthracene	120-12-7	0.5	mg/kg										<0.5	
Fluoranthene	206-44-0	0.5	mg/kg										<0.5	
Pyrene	129-00-0	0.5	mg/kg										<0.5	
Benz(a)anthracene	56-55-3	0.5	mg/kg										<0.5	
Chrysene	218-01-9	0.5	mg/kg										<0.5	
Benzo(b+)fluoranthene	205-99-2	0.5	mg/kg										<0.5	
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg										<0.5	
Benzo(a)pyrene	50-32-8	0.5	mg/kg										<0.5	
Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg										<0.5	
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg										<0.5	
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg										<0.5	
^ Sum of polycyclic aromatic hydrocarbons													<0.5	
^ Benzo(a)pyrene TEQ (zero)													<0.5	
^ Benzo(a)pyrene TEQ (half LOR)													0.6	
^ Benzo(a)pyrene TEQ (LOR)													1.2	
EP080/071: Total Petroleum Hydrocarbons														
C6 - C9 Fraction														
C10 - C14 Fraction														
C15 - C28 Fraction														
C29 - C36 Fraction														
^ C10 - C36 Fraction (sum)														
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions														



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH07-1	BH07-2	BH07-4	BH08-1	BH08-3
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10				
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10				
>C10 - C16 Fraction		50	mg/kg	<50				
>C16 - C34 Fraction		100	mg/kg	<100				
>C34 - C40 Fraction		100	mg/kg	<100				
^ >C10 - C40 Fraction (sum)		50	mg/kg	<50				
^ >C10 - C16 Fraction minus Naphthalene (F2)		50	mg/kg	<50				
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2				
Toluene	108-88-3	0.5	mg/kg	<0.5				
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5				
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5				
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5				
^ Sum of BTEX		0.2	mg/kg	<0.2				
^ Total Xylenes		0.5	mg/kg	<0.5				
Naphthalene	91-20-3	1	mg/kg	<1				
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	108				110
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	116				134
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%				102	
2-Chlorophenol-D4	93951-73-6	0.5	%				89.5	
2,4,6-Tribromophenol	118-79-6	0.5	%				82.9	
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%				87.2	
Anthracene-d10	1719-06-8	0.5	%				110	
4-Terphenyl-d14	1718-51-0	0.5	%				115	
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	81.2				
Toluene-D8	2037-26-5	0.2	%	65.8				
4-Bromofluorobenzene	460-00-4	0.2	%	77.4				



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		Sampling date / time		BH08-4		BH09-1		BH09-2		BH09-3		BH11-1	
Compound	CAS Number	LOR	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)															
Moisture Content	----	1.0	%	3.2	7.9	7.6	4.8	22.2							
EG005(ED093)T: Total Metals by ICP-AES															
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5						<5	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1						<1	
Chromium	7440-47-3	2	mg/kg	6	22	11	8	12						12	
Copper	7440-50-8	5	mg/kg	<5	11	11	<5	6						6	
Lead	7439-92-1	5	mg/kg	<5	15	13	<5	7						7	
Nickel	7440-02-0	2	mg/kg	7	9	9	8	13						13	
Zinc	7440-66-6	5	mg/kg	12	37	34	15	33						33	
EG035T: Total Recoverable Mercury by FIMS															
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1						<0.1	
EP068A: Organochlorine Pesticides (OC)															
alpha-BHC	319-84-6	0.05	mg/kg	----	----	<0.05	----	----						----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	<0.05	----	----						----	
beta-BHC	319-85-7	0.05	mg/kg	----	----	<0.05	----	----						----	
gamma-BHC	58-89-9	0.05	mg/kg	----	----	<0.05	----	----						----	
delta-BHC	319-86-8	0.05	mg/kg	----	----	<0.05	----	----						----	
Heptachlor	76-44-8	0.05	mg/kg	----	----	<0.05	----	----						----	
Aldrin	309-00-2	0.05	mg/kg	----	----	<0.05	----	----						----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	<0.05	----	----						----	
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	<0.05	----	----						----	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	<0.05	----	----						----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	<0.05	----	----						----	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	<0.05	----	----						----	
Dieldrin	60-57-1	0.05	mg/kg	----	----	<0.05	----	----						----	
4,4'-DDE	72-55-9	0.05	mg/kg	----	----	<0.05	----	----						----	
Endrin	72-20-8	0.05	mg/kg	----	----	<0.05	----	----						----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	<0.05	----	----						----	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	<0.05	----	----						----	
4,4'-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	----	----						----	
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	<0.05	----	----						----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	<0.05	----	----						----	
4,4'-DDT	50-29-3	0.2	mg/kg	----	----	<0.2	----	----						----	
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	<0.05	----	----						----	

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH08-4		BH09-1		BH09-2		BH09-3		BH11-1	
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result	Result	Result	Result		
					EB2210676-063	EB2210676-068	EB2210676-069	EB2210676-070	EB2210676-076				
EP068A: Organochlorine Pesticides (OC) - Continued													
Methoxychlor	72-43-5	0.2		mg/kg	-----				<0.2	-----		-----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05		mg/kg	-----				<0.05	-----		-----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05		mg/kg	-----				<0.05	-----		-----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons													
Naphthalene	91-20-3	0.5		mg/kg	-----				<0.5	-----		<0.5	
Acenaphthylene	208-96-8	0.5		mg/kg	-----				<0.5	-----		<0.5	
Acenaphthene	83-32-9	0.5		mg/kg	-----				<0.5	-----		<0.5	
Fluorene	86-73-7	0.5		mg/kg	-----				<0.5	-----		<0.5	
Phenanthrene	85-01-8	0.5		mg/kg	-----				<0.5	-----		<0.5	
Anthracene	120-12-7	0.5		mg/kg	-----				<0.5	-----		<0.5	
Fluoranthene	206-44-0	0.5		mg/kg	-----				<0.5	-----		<0.5	
Pyrene	129-00-0	0.5		mg/kg	-----				<0.5	-----		<0.5	
Benz(a)anthracene	56-55-3	0.5		mg/kg	-----				<0.5	-----		<0.5	
Chrysene	218-01-9	0.5		mg/kg	-----				<0.5	-----		<0.5	
Benzo(b+J)fluoranthene	205-99-2	0.5		mg/kg	-----				<0.5	-----		<0.5	
Benzo(k)fluoranthene	207-08-9	0.5		mg/kg	-----				<0.5	-----		<0.5	
Benzo(a)pyrene	50-32-8	0.5		mg/kg	-----				<0.5	-----		<0.5	
Indeno(1,2,3.cd)pyrene	193-39-5	0.5		mg/kg	-----				<0.5	-----		<0.5	
Dibenz(a,h)anthracene	53-70-3	0.5		mg/kg	-----				<0.5	-----		<0.5	
Benzo(g,h,i)perylene	191-24-2	0.5		mg/kg	-----				<0.5	-----		<0.5	
^ Sum of polycyclic aromatic hydrocarbons													

^ Benzo(a)pyrene TEQ (zero)													

^ Benzo(a)pyrene TEQ (half LOR)													

^ Benzo(a)pyrene TEQ (LOR)													

EP080/071: Total Petroleum Hydrocarbons													

C6 - C9 Fraction		10		mg/kg	-----				-----			<10	
C10 - C14 Fraction		50		mg/kg	-----				-----			<50	
C15 - C28 Fraction		100		mg/kg	-----				-----			<100	
C29 - C36 Fraction		100		mg/kg	-----				-----			<100	
^ C10 - C36 Fraction (sum)													

EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions													

C6 - C10 Fraction	C6_C10	10		mg/kg	-----				-----			<10	
^ C6 - C10 Fraction minus BTEX (F1)													
C6_C10-BTEX													

<10													



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH08-4	BH09-1	BH09-2	BH09-3	BH11-1
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
>C10 - C16 Fraction		50	mg/kg					<50
>C16 - C34 Fraction		100	mg/kg					<100
>C34 - C40 Fraction		100	mg/kg					<100
^ >C10 - C40 Fraction (sum)		50	mg/kg					<50
^ >C10 - C16 Fraction minus Naphthalene (F2)		50	mg/kg					<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg					<0.2
Toluene	108-88-3	0.5	mg/kg					<0.5
Ethylbenzene	100-41-4	0.5	mg/kg					<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg					<0.5
ortho-Xylene	95-47-6	0.5	mg/kg					<0.5
^ Sum of BTEX		0.2	mg/kg					<0.2
^ Total Xylenes		0.5	mg/kg					<0.5
Naphthalene	91-20-3	1	mg/kg					<1
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%			104		----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%			128		----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%			109		115
2-Chlorophenol-D4	93951-73-6	0.5	%			99.8		112
2,4,6-Tribromophenol	118-79-6	0.5	%			80.8		102
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%			89.1		102
Anthracene-d10	1719-06-8	0.5	%			113		119
4-Terphenyl-d14	1718-51-0	0.5	%			117		89.0
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%					110
Toluene-D8	2037-26-5	0.2	%					89.9
4-Bromofluorobenzene	460-00-4	0.2	%					108

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH11-2	BH11-3	BH11-7	BH12-1	BH12-3
Compound	CAS Number	Sampling date / time		13-Apr-2022 00:00	13-Apr-2022 00:00	13-Apr-2022 00:00	13-Apr-2022 00:00	13-Apr-2022 00:00
		LOR	Unit	EB2210676-077	EB2210676-078	EB2210676-082	EB2210676-086	EB2210676-088
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content		0.1	%	9.6				
Moisture Content		1.0	%		8.8	18.5	3.6	5.3
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg		<5	7	18	10
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg			17	27	22
Copper	7440-50-8	5	mg/kg		<5	16	49	30
Lead	7439-92-1	5	mg/kg		14	14	6	<5
Nickel	7440-02-0	2	mg/kg		8	9	20	14
Zinc	7440-66-6	5	mg/kg		24	36	48	34
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg					
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg					
beta-BHC	319-85-7	0.05	mg/kg					
gamma-BHC	58-89-9	0.05	mg/kg					
delta-BHC	319-86-8	0.05	mg/kg					
Heptachlor	76-44-8	0.05	mg/kg					
Aldrin	309-00-2	0.05	mg/kg					
Heptachlor epoxide	1024-57-3	0.05	mg/kg					
^ Total Chlordane (sum)		0.05	mg/kg					
trans-Chlordane	5103-74-2	0.05	mg/kg					
alpha-Endosulfan	959-98-8	0.05	mg/kg					
cis-Chlordane	5103-71-9	0.05	mg/kg					
Dieldrin	60-57-1	0.05	mg/kg					
4,4'-DDE	72-55-9	0.05	mg/kg					
Endrin	72-20-8	0.05	mg/kg					
beta-Endosulfan	33213-65-9	0.05	mg/kg					
^ Endosulfan (sum)	115-29-7	0.05	mg/kg					
4,4'-DDD	72-54-8	0.05	mg/kg					
Endrin aldehyde	7421-93-4	0.05	mg/kg					
Endosulfan sulfate	1031-07-8	0.05	mg/kg					
4,4'-DDT	50-29-3	0.2	mg/kg					



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH11-2	BH11-3	BH11-7	BH12-1	BH12-3
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Endrin ketone	53494-70-5	0.05		mg/kg	<0.05			
Methoxychlor	72-43-5	0.2		mg/kg	<0.2			
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05		mg/kg	<0.05			
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05		mg/kg	<0.05			
	0-2							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5		mg/kg		<0.5		<0.5
Acenaphthylene	208-96-8	0.5		mg/kg		<0.5		<0.5
Acenaphthene	83-32-9	0.5		mg/kg		<0.5		<0.5
Fluorene	86-73-7	0.5		mg/kg		<0.5		<0.5
Phenanthrene	85-01-8	0.5		mg/kg		<0.5		<0.5
Anthracene	120-12-7	0.5		mg/kg		<0.5		<0.5
Fluoranthene	206-44-0	0.5		mg/kg		<0.5		<0.5
Pyrene	129-00-0	0.5		mg/kg		<0.5		<0.5
Benz(a)anthracene	56-55-3	0.5		mg/kg		<0.5		<0.5
Chrysene	218-01-9	0.5		mg/kg		<0.5		<0.5
Benzo(b+)fluoranthene	205-99-2	0.5		mg/kg		<0.5		<0.5
Benzo(k)fluoranthene	207-08-9	0.5		mg/kg		<0.5		<0.5
Benzo(a)pyrene	50-32-8	0.5		mg/kg		<0.5		<0.5
Indeno(1,2,3-cd)pyrene	193-39-5	0.5		mg/kg		<0.5		<0.5
Dibenz(a,h)anthracene	53-70-3	0.5		mg/kg		<0.5		<0.5
Benzo(g,h,i)perylene	191-24-2	0.5		mg/kg		<0.5		<0.5
^ Sum of polycyclic aromatic hydrocarbons								
^ Benzo(a)pyrene TEQ (zero)								
^ Benzo(a)pyrene TEQ (half LOR)								
^ Benzo(a)pyrene TEQ (LOR)								
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05		%	105			
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05		%	130			
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5		%		82.0		90.5
2-Chlorophenol-D4	93951-73-6	0.5		%		70.4		65.1
2,4,6-Tribromophenol	118-79-6	0.5		%		77.1		80.5

Sub-Matrix: SOIL
(Matrix: SOIL)

Sub-Matrix: SOIL (Matrix: SOIL)	Sample ID									
	Compound	CAS Number	LOR	Sampling date / time		BH11-2	BH11-3	BH11-7	BH12-1	BH12-3
				Unit	13-Apr-2022 00:00	13-Apr-2022 00:00	13-Apr-2022 00:00	13-Apr-2022 00:00	13-Apr-2022 00:00	
					EB2210676-077	EB2210676-078	EB2210676-082	EB2210676-086	EB2210676-088	
					Result	Result	Result	Result	Result	
					Result	Result	Result	Result	Result	
EP075(SIM)T: PAH Surrogates										
2-Fluorobiphenyl	321-60-8	0.5	%					53.6		55.7
Anthracene-d10	1719-06-8	0.5	%					111		107
4-Terphenyl-d14	1718-51-0	0.5	%					117		114



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID			BH12-5		BH13-1		BH13-2		BH13-5		
		Sampling date / time			13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		
Compound	CAS Number	LOR	Unit	Result		EB2210676-090		EB2210676-094		EB2210676-095		EB2210676-098	
EA055: Moisture Content													
Moisture Content				----	1.0	%	-----	23.0	-----	-----	-----	-----	-----
EA055: Moisture Content (Dried @ 105-110°C)													
Moisture Content				----	1.0	%	-----	7.3	-----	7.5	-----	8.9	-----
EG005(ED093)T: Total Metals by ICP-AES													
Arsenic	7440-38-2	5	mg/kg			<5		<5		<5		<5	
Cadmium	7440-43-9	1	mg/kg			<1		<1		<1		<1	
Chromium	7440-47-3	2	mg/kg			10		13		10		9	
Copper	7440-50-8	5	mg/kg			9		11		11		6	
Lead	7439-92-1	5	mg/kg			<5		14		11		<5	
Nickel	7440-02-0	2	mg/kg			8		11		9		8	
Zinc	7440-66-6	5	mg/kg			19		43		36		23	
EG035T: Total Recoverable Mercury by FIMS													
Mercury	7439-97-6	0.1	mg/kg			<0.1		<0.1		<0.1		<0.1	
EP080/071: Total Petroleum Hydrocarbons													
C6 - C9 Fraction	-----	10	mg/kg			-----		<10		-----		-----	
C10 - C14 Fraction	-----	50	mg/kg			-----		<50		-----		-----	
C15 - C28 Fraction	-----	100	mg/kg			-----		<100		-----		-----	
C29 - C36 Fraction	-----	100	mg/kg			-----		<100		-----		-----	
^ C10 - C36 Fraction (sum)	-----	50	mg/kg			-----		<50		-----		-----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions													
C6 - C10 Fraction	C6_C10	10	mg/kg			-----		<10		-----		-----	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg			-----		<10		-----		-----	
>C10 - C16 Fraction	-----	50	mg/kg			-----		<50		-----		-----	
>C16 - C34 Fraction	-----	100	mg/kg			-----		<100		-----		-----	
>C34 - C40 Fraction	-----	100	mg/kg			-----		<100		-----		-----	
^ >C10 - C40 Fraction (sum)	-----	50	mg/kg			-----		<50		-----		-----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	-----	50	mg/kg			-----		<50		-----		-----	
EP080: BTEXN													
Benzene	71-43-2	0.2	mg/kg			-----		<0.2		-----		-----	
Toluene	108-88-3	0.5	mg/kg			-----		<0.5		-----		-----	
Ethylbenzene	100-41-4	0.5	mg/kg			-----		<0.5		-----		-----	
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg			-----		<0.5		-----		-----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		Sampling date / time		BH12-5		BH13-1		BH13-2		BH13-5	
Compound	CAS Number	LOR	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
EP080: BTEXN - Continued													
ortho-Xylene	95-47-6	0.5	mg/kg					<0.5					
^ Sum of BTEX		0.2	mg/kg					<0.2					
^ Total Xylenes		0.5	mg/kg					<0.5					
Naphthalene	91-20-3	1	mg/kg					<1					
EP080S: TPH(V)/BTEX Surrogates													
1,2-Dichloroethane-D4	17060-07-0	0.2	%					114					
Toluene-D8	2037-26-5	0.2	%					97.4					
4-Bromofluorobenzene	460-00-4	0.2	%					115					



Surrogate Control Limits

Sub-Matrix: SOIL			
Compound	CAS Number	Recovery Limits (%)	
		Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	16	134
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	10	138
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	23	134
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	35	154
2-Chlorophenol-D4	93951-73-6	42	153
2,4,6-Tribromophenol	118-79-6	26	157
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	34	156
Anthracene-d10	1719-06-8	37	153
4-Terphenyl-d14	1718-51-0	42	172
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	53	134
Toluene-D8	2037-26-5	60	131
4-Bromofluorobenzene	460-00-4	59	127
EP231S: PFAS Surrogate			
13C4-PFOS	-----	76	136
13C8-PFOA	-----	78	131



Environmental

QUALITY CONTROL REPORT

Work Order : **EB2210676**

Page : 1 of 24

Client : **BUTLER PARTNERS PTY LTD**
Contact : **MS SUZANNE WALKER**
Address : **PO BOX 2267**
FORTITUDE VALLEY BC QLD, AUSTRALIA 4006
Telephone : **+61 07 3852 3800**
Project : **018-150M**
Order number : **BP202052**
C-O-C number : **1**
Sampler : **RICHARD PEARCE**
Site : **89 Macarthur Ave, Hamilton**
Quote number : **EN/222 (Planned event Tables)**
No. of samples received : **102**
No. of samples analysed : **39**

Laboratory : **Environmental Division Brisbane**
Contact : **Kimberly Hilton-Barber**
Address : **2 Byth Street Stafford QLD Australia 4053**
Telephone : **+61-7-3243 7222**
Date Samples Received : **14-Apr-2022**
Date Analysis Commenced : **20-Apr-2022**
Issue Date : **28-Apr-2022**



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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	Position	Accreditation Category
Mark Hallas	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
Sarah Ashworth	Laboratory Manager - Brisbane	Brisbane Organics, Stafford, QLD



General Comments

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

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

RPD = Relative Percentage Difference

= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: SOIL

Sub-Matrix: SOIL			Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4292990)									
EB2210636-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	3	2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	43	38	11.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	7	6	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	18	18	0.0	No Limit
EB2210676-050	BH07-1	EG005T: Cadmium	7440-43-9	1	mg/kg	1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	7	8	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	24	20	19.8	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	22	30.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	26	27	4.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	91	# 45	66.7	0% - 50%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4293483)									
EB2210084-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	2	2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	10	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	50	48	3.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	18	18	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	44	42	3.1	No Limit
EB2210676-021	BH03-4	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	9	8	0.0	No Limit



Sub-Matrix: SOIL

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4293483) - continued										
EB2210676-021	BH03-4	EG005T: Nickel	7440-02-0	2	mg/kg	8	7	0.0	No Limit	
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Copper	7440-50-8	5	mg/kg	6	<5	0.0	No Limit	
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Zinc	7440-66-6	5	mg/kg	20	17	17.2	No Limit	
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4293486)										
EB2210676-063	BH08-4	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit	
		EG005T: Chromium	7440-47-3	2	mg/kg	6	7	0.0	No Limit	
		EG005T: Nickel	7440-02-0	2	mg/kg	7	7	0.0	No Limit	
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit	
EB2210676-098	BH13-5	EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Zinc	7440-66-6	5	mg/kg	12	13	0.0	No Limit	
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit	
		EG005T: Chromium	7440-47-3	2	mg/kg	9	7	21.0	No Limit	
		EG005T: Nickel	7440-02-0	2	mg/kg	8	7	0.0	No Limit	
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Copper	7440-50-8	5	mg/kg	6	<5	0.0	No Limit	
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Zinc	7440-66-6	5	mg/kg	23	16	35.6	No Limit	
		EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4293009)								
EB2210636-001	Anonymous	EA055: Moisture Content	----	0.1	%	4.8	5.0	4.7	No Limit	
EB2210662-011	Anonymous	EA055: Moisture Content	----	0.1	%	54.1	59.9	10.2	0% - 20%	
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4293437)										
EB2210657-001	Anonymous	EA055: Moisture Content	----	0.1	%	11.0	13.3	19.5	0% - 20%	
EB2210676-062	BH08-3	EA055: Moisture Content	----	0.1	%	4.2	4.5	7.4	No Limit	
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4293488)										
EB2210676-002	BH01-2	EA055: Moisture Content	----	0.1	%	9.1	9.0	1.4	No Limit	
EB2210676-043	BH06-2	EA055: Moisture Content	----	0.1	%	6.0	6.4	7.6	No Limit	
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4293489)										
EB2210676-095	BH13-2	EA055: Moisture Content	----	0.1	%	7.5	7.8	3.6	No Limit	
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4292991)										
EB2210636-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit	
EB2210676-050	BH07-1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit	
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4293485)										
EB2210676-002	BH01-2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit	
EB2210676-037	BH05-2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit	
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4293487)										
EB2210676-070	BH09-3	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit	



Sub-Matrix: **SOIL**

Laboratory sample ID		Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			
Laboratory sample ID		Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 4294841)										
EB2208345-001	Anonymous	EP066: Total Polychlorinated biphenyls		---	0.1	mg/kg	<0.4	<0.4	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4293435)										
EB2210657-001		Anonymous								
		EP068: alpha-BHC		319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)		118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC		319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC		58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC		319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor		76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin		309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide		1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Total Chlordane (sum)		---	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane		5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan		959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane		5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin		60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE		72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin		72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan		33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan (sum)		115-29-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD		72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde		7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate		1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone		53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Sum of DDD + DDE + DDT		72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Sum of Aldrin + Dieldrin		309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT		50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor		72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: alpha-BHC		319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)		118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC		319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC		58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC		319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor		76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin		309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide		1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Total Chlordane (sum)		---	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane		5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan		959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report								
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4293435) - continued										
EB2210676-069	BH09-2	EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit	
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit	
		EP068A: Organochlorine Pesticides (OC) (QC Lot: 4296470)								
EB2210316-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	



Sub-Matrix: **SOIL**

Laboratory sample ID		Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			
Laboratory sample ID		Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4296470) - continued										
EB2210316-001	Anonymous	EP068: Sum of Aldrin + Dieldrin		309-00-2/60-57 -1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT		50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor		72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EB2210883-001	Anonymous	EP068: alpha-BHC		319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)		118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC		319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC		58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC		319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor		76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin		309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide		1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Total Chlordane (sum)		---	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane		5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan		959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane		5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin		60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE		72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin		72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4293436)	BH09-2	EP068: beta-Endosulfan		33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan (sum)		115-29-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD		72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde		7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate		1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone		53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Sum of DDD + DDE + DDT		72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Sum of Aldrin + Dieldrin		309-00-2/60-57 -1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT		50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor		72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4293436)								
		EP075(SIM): Naphthalene		91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene		208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene		83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene		86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene		85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene		120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene		206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene		129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL					Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4293436) - continued										
EB2210676-069	BH09-2	EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(b+)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
			205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4296469)										
EB2210316-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
EB2210883-001	Anonymous	EP075(SIM): Benzo(b+)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
			205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	



Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4296469) - continued									
EB2210883-001	Anonymous	EP075(SIM): Benzo(b+)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4296472)							
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EB2210473-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	0.7	0.6	0.0	No Limit		
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	0.7	0.6	0.0	No Limit		
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	0.6	<0.5	23.1	No Limit		
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Benzo(b+)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	0.6	<0.5	0.0	No Limit		
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4296472) - continued										
EB2210636-007	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4292995)										
EB2210636-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit	
EB2210676-050	BH07-1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4296468)										
EB2210316-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit	
		EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
EB2210883-001	Anonymous	EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4296473)										
EB2210473-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit	
		EP071: C15 - C28 Fraction	----	100	mg/kg	1130	780	36.6	0% - 50%	
		EP071: C29 - C36 Fraction	----	100	mg/kg	1020	820	21.0	0% - 50%	
EB2210636-007	Anonymous	EP071: C10 - C14 Fraction	----	50	mg/kg	50	<50	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4292995)										
EB2210636-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
EB2210676-050	BH07-1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4296468)										
EB2210316-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit	
		EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
EB2210883-001	Anonymous	EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4296473)										
EB2210473-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit	
		EP071: >C16 - C34 Fraction	----	100	mg/kg	1470	290	29.7	0% - 50%	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	340	290	15.1	No Limit	
EB2210636-007	Anonymous	EP071: >C10 - C16 Fraction	----	50	mg/kg	60	<50	18.2	No Limit	



Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report								
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EP080: BTEXN (QC Lot: 4292995)										
EB2210636-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit	
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
			106-42-3							
	BH07-1	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit	
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
	EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		106-42-3								
	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit		
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4293004)										
EB2210636-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4293557)										
EB2210468-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0003	0.0004	0.0	No Limit	
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
EB2210719-005	Anonymous	EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4293004)										
EB2210636-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	



Sub-Matrix: SOIL			Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4293004) - continued									
EB2210636-001	Anonymous	EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4293557)									
EB2210468-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2210719-005	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4293004)									
EB2210636-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: SOIL			Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4293004) - continued									
EB2210636-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4293557)									
EB2210468-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2210719-005	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4293004)							
		EB2210636-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2			0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4			0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0			0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4293557)									



Sub-Matrix: SOIL			Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4293557) - continued									
EB2210468-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2210719-005	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit



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Work Order : EB2210676
Client : BUTLER PARTNERS PTY LTD
Project : 018-150M

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL					Method Blank (MB) Report				Laboratory Control Spike (LCS) Report			
	Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)			
							LCS	Low	High			
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4292990)												
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	83.4 mg/kg	114	84.0	123				
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----				
EG005T: Chromium	7440-47-3	2	mg/kg	<2	14.1 mg/kg	96.4	83.0	125				
EG005T: Copper	7440-50-8	5	mg/kg	<5	50 mg/kg	92.3	86.0	122				
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.4 mg/kg	98.2	84.0	119				
EG005T: Nickel	7440-02-0	2	mg/kg	<2	11.8 mg/kg	98.0	81.5	118				
EG005T: Zinc	7440-66-6	5	mg/kg	<5	148.7 mg/kg	96.9	80.0	120				
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4293483)												
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	83.4 mg/kg	105	84.0	123				
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----				
EG005T: Chromium	7440-47-3	2	mg/kg	<2	14.1 mg/kg	114	83.0	125				
EG005T: Copper	7440-50-8	5	mg/kg	<5	50 mg/kg	100	86.0	122				
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.4 mg/kg	111	84.0	119				
EG005T: Nickel	7440-02-0	2	mg/kg	<2	11.8 mg/kg	108	81.5	118				
EG005T: Zinc	7440-66-6	5	mg/kg	<5	148.7 mg/kg	116	80.0	120				
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4293486)												
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	83.4 mg/kg	98.6	84.0	123				
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----				
EG005T: Chromium	7440-47-3	2	mg/kg	<2	14.1 mg/kg	109	83.0	125				
EG005T: Copper	7440-50-8	5	mg/kg	<5	50 mg/kg	101	86.0	122				
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.4 mg/kg	102	84.0	119				
EG005T: Nickel	7440-02-0	2	mg/kg	<2	11.8 mg/kg	105	81.5	118				
EG005T: Zinc	7440-66-6	5	mg/kg	<5	148.7 mg/kg	109	80.0	120				
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4292991)												
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	100	70.0	125				
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4293485)												
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	119	70.0	125				
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4293487)												
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	# 128	70.0	125				
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4294841)												
EP066: Total Polychlorinated biphenyls	-----	0.1	mg/kg	<0.1	1 mg/kg	110	71.6	155				
EP068A: Organochlorine Pesticides (OC) (QCLot: 4293435)												
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	104	72.8	127				



Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4293435) - continued									
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	106	71.0	127	127
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	106	67.5	126	126
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	105	72.7	127	127
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	70.6	122	122
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	64.8	127	127
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	104	72.4	122	122
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	104	67.4	125	125
EP068: Total Chlordane (sum)	-----	0.05	mg/kg	<0.05	-----	-----	-----	-----	-----
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	65.6	124	124
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	106	70.4	122	122
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	65.6	125	125
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	107	69.1	124	124
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	109	72.4	125	125
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	106	63.2	127	127
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	109	69.7	120	120
EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	-----	-----	-----	-----	-----
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	107	61.2	124	124
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	55.5	125	125
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	57.1	117	117
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	113	51.9	125	125
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	101	46.5	122	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	93.7	34.0	130	130
EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg	<0.05	-----	-----	-----	-----	-----
EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	-----	-----	-----	-----	-----
EP068A: Organochlorine Pesticides (OC) (QCLot: 4296470)									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.5	72.8	127	127
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	71.0	127	127
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	67.5	126	126
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	100	72.7	127	127
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	70.6	122	122
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	107	64.8	127	127
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	105	72.4	122	122
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	106	67.4	125	125
EP068: Total Chlordane (sum)	-----	0.05	mg/kg	<0.05	-----	-----	-----	-----	-----
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	105	65.6	124	124
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.7	70.4	122	122
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	107	65.6	125	125



Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4296470) - continued									
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.1	124	124
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	107	72.4	125	125
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	63.2	127	127
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	100	69.7	120	120
EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	---	---	---	---	---
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	113	61.2	124	124
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	95.7	55.5	125	125
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.1	57.1	117	117
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	114	51.9	125	125
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	104	46.5	122	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	86.9	34.0	130	130
EP068: Sum of DDD + DDE + DDT	72-54-8/72-5 5-9/50-2	0.05	mg/kg	<0.05	---	---	---	---	---
EP068: Sum of Aldrin + Dieldrin	309-00-2/60- 57-1	0.05	mg/kg	<0.05	---	---	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4293436)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	106	72.6	133	133
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	89.9	63.2	144	144
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	107	66.0	132	132
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	105	76.2	134	134
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	107	71.8	137	137
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	109	77.1	143	143
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	101	74.1	140	140
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	102	72.0	139	139
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	96.4	58.0	145	145
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	93.8	63.0	147	147
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	1.5 mg/kg	105	70.5	142	142
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	114	75.5	138	138
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	98.0	68.5	140	140
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	112	58.4	143	143
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	116	52.1	149	149
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	113	64.6	140	140
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4296469)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	94.7	72.6	133	133
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	69.6	63.2	144	144
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	95.4	66.0	132	132
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	108	76.2	134	134
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	96.4	71.8	137	137



Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4296469) - continued									
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	97.0	77.1	143	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	92.0	74.1	140	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	91.9	72.0	139	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	86.7	58.0	145	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	84.4	63.0	147	
EP075(SIM): Benzo(b+h)fluoranthene	205-99-2	0.5	mg/kg	<0.5	1.5 mg/kg	100	70.5	142	
EP075(SIM): Benzo(k)fluoranthene	205-82-3								
EP075(SIM): Benzo(a)pyrene	207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	98.5	75.5	138	
EP075(SIM): Indeno(1,2,3-cd)pyrene	50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	89.0	68.5	140	
EP075(SIM): Dibenz(a,h)anthracene	193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	103	58.4	143	
EP075(SIM): Benzo(g,h,i)perylene	53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	106	52.1	149	
EP075(SIM): Benzo(a)anthracene	191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	102	64.6	140	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4296472)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	115	72.6	133	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	103	63.2	144	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	114	66.0	132	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	109	76.2	134	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	113	71.8	137	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	123	77.1	143	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	119	74.1	140	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	125	72.0	139	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	131	58.0	145	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	127	63.0	147	
EP075(SIM): Benzo(b+h)fluoranthene	205-99-2	0.5	mg/kg	<0.5	1.5 mg/kg	112	70.5	142	
EP075(SIM): Benzo(k)fluoranthene	205-82-3								
EP075(SIM): Benzo(a)pyrene	207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	99.4	75.5	138	
EP075(SIM): Indeno(1,2,3-cd)pyrene	50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	98.4	68.5	140	
EP075(SIM): Dibenz(a,h)anthracene	193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	116	58.4	143	
EP075(SIM): Benzo(g,h,i)perylene	53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	117	52.1	149	
EP075(SIM): Benzo(a)anthracene	191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	110	64.6	140	
EP080/074: Total Petroleum Hydrocarbons (QCLot: 4292995)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	18 mg/kg	94.0	64.0	120	
EP080/074: Total Petroleum Hydrocarbons (QCLot: 4296468)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	310 mg/kg	91.5	79.4	125	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	490 mg/kg	101	78.8	122	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----	
EP080/074: Total Petroleum Hydrocarbons (QCLot: 4296473)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	310 mg/kg	104	79.4	125	



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Control Spike (LCS) Report							
Method: Compound				Method Blank (MB) Report		Spike		Spike Recovery (%)		Acceptable Limits (%)	
CAS Number				LOR	Unit	Result	Concentration	LCS	Low	High	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4296473) - continued											
EP071: C15 - C28 Fraction				100	mg/kg	<100	490 mg/kg	97.4	78.8	122	
EP071: C29 - C36 Fraction				100	mg/kg	<100	-----	-----	-----	-----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4292995)											
EP080: C6 - C10 Fraction				10	mg/kg	<10	22.5 mg/kg	94.3	58.1	124	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4296468)											
EP071: >C10 - C16 Fraction				50	mg/kg	<50	450 mg/kg	98.4	81.0	132	
EP071: >C16 - C34 Fraction				100	mg/kg	<100	320 mg/kg	100	67.2	130	
EP071: >C34 - C40 Fraction				100	mg/kg	<100	-----	-----	-----	-----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4296473)											
EP071: >C10 - C16 Fraction				50	mg/kg	<50	450 mg/kg	101	81.0	132	
EP071: >C16 - C34 Fraction				100	mg/kg	<100	320 mg/kg	100	67.2	130	
EP071: >C34 - C40 Fraction				100	mg/kg	<100	-----	-----	-----	-----	
EP080: BTEXN (QCLot: 4292995)											
EP080: Benzene				71-43-2	0.2	mg/kg	<0.2	1 mg/kg	90.5	68.0	107
EP080: Toluene				108-88-3	0.5	mg/kg	<0.5	1 mg/kg	91.7	69.0	108
EP080: Ethylbenzene				100-41-4	0.5	mg/kg	<0.5	1 mg/kg	96.4	68.0	109
EP080: meta- & para-Xylene				108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	100	70.0	114
EP080: ortho-Xylene				95-47-6	0.5	mg/kg	<0.5	1 mg/kg	99.6	74.0	116
EP080: Naphthalene				91-20-3	1	mg/kg	<1	1 mg/kg	91.9	74.0	109
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4293004)											
EP231X: Perfluorobutane sulfonic acid (PFBS)				375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	99.5	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)				2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	89.3	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)				355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	88.1	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)				375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	86.6	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)				1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	99.6	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)				335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	110	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4293557)											
EP231X: Perfluorobutane sulfonic acid (PFBS)				375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	96.8	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)				2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	94.4	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)				355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	93.6	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)				375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	98.7	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)				1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	87.5	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)				335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	83.3	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4293004)											
EP231X: Perfluorobutanoic acid (PFBA)				375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	88.0	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)				2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.6	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)				307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	81.6	70.0	132



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Control Spike (LCS) Report					
Method Blank (MB) Report		Spike Concentration		Spike Recovery (%)		Acceptable Limits (%)			
Method: Compound		CAS Number	LOR	Unit	Result				
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4293004) - continued									
EP231X: Perfluoroheptanoic acid (PFHpA)		375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.6	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)		335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	69.0	133
EP231X: Perfluorononanoic acid (PFNA)		375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.8	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)		335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)		2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.4	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)		307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.4	69.0	135
EP231X: Perfluorotridecanoic acid (PFTriDA)		72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)		376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	101	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4293557)									
EP231X: Perfluorobutanoic acid (PFBA)		375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	103	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)		2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.6	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)		307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.8	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)		375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.0	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)		335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	69.0	133
EP231X: Perfluorononanoic acid (PFNA)		375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.4	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)		335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.4	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)		2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.0	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)		307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.8	69.0	135
EP231X: Perfluorotridecanoic acid (PFTriDA)		72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)		376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.4	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4293004)									
EP231X: Perfluorooctane sulfonamide (FOSA)		754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)		31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	99.7	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)		4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.0	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)		24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.9	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)		1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	103	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)		2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.8	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)		2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.4	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4293557)									
EP231X: Perfluorooctane sulfonamide (FOSA)		754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)		31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	109	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)		4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.8	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)		24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.0	61.5	139



Sub-Matrix: SOIL				Method Blank (MB) Report				Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	Concentration	Spike Recovery (%)	Acceptable Limits (%)	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4293557) - continued											
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	113	61.9	137			
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.8	63.0	144			
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.4	61.0	139			
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4293004)											
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	86.3	62.0	145			
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	89.0	64.0	140			
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	113	65.0	137			
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	85.8	54.8	124			
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4293557)											
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	86.8	62.0	145			
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	95.3	64.0	140			
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	80.4	65.0	137			
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	85.4	54.8	124			

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL

Matrix Spike (MS) Report				Matrix Spike (MS) Report			
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4292990)							
EB2210636-002	Anonymous	EG005T: Arsenic	7440-38-2	100 mg/kg	88.5	70.0	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	90.9	70.0	130
		EG005T: Chromium	7440-47-3	100 mg/kg	# 48.9	70.0	130
		EG005T: Copper	7440-50-8	100 mg/kg	84.8	70.0	130
		EG005T: Lead	7439-92-1	100 mg/kg	# 28.0	70.0	130
		EG005T: Nickel	7440-02-0	100 mg/kg	86.8	70.0	130
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4293483)	Anonymous	EG005T: Zinc	7440-66-6	100 mg/kg	# Not Determined	70.0	130
		EG005T: Arsenic	7440-38-2	100 mg/kg	102	70.0	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	103	70.0	130
		EG005T: Chromium	7440-47-3	100 mg/kg	99.6	70.0	130
EG005T: Copper		EG005T: Copper	7440-50-8	100 mg/kg	98.9	70.0	130



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL			Matrix Spike (MS) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%)		
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4293483) - continued								
EB2210084-002	Anonymous		EG005T: Lead	7439-92-1	100 mg/kg	97.7	70.0	130
			EG005T: Nickel	7440-02-0	100 mg/kg	90.5	70.0	130
			EG005T: Zinc	7440-66-6	100 mg/kg	96.6	70.0	130
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4293486)								
EB2210676-068	BH09-1		EG005T: Arsenic	7440-38-2	100 mg/kg	89.5	70.0	130
			EG005T: Cadmium	7440-43-9	25 mg/kg	86.9	70.0	130
			EG005T: Chromium	7440-47-3	100 mg/kg	82.1	70.0	130
			EG005T: Copper	7440-50-8	100 mg/kg	88.3	70.0	130
			EG005T: Lead	7439-92-1	100 mg/kg	87.0	70.0	130
			EG005T: Nickel	7440-02-0	100 mg/kg	85.1	70.0	130
EG005T: Zinc	7440-66-6	100 mg/kg	79.3	70.0	130			
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4292991)								
EB2210636-002	Anonymous		EG035T: Mercury	7439-97-6	0.5 mg/kg	82.6	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4293485)								
EB2210676-003	BH01-3		EG035T: Mercury	7439-97-6	0.5 mg/kg	97.0	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4293487)								
EB2210676-078	BH11-3		EG035T: Mercury	7439-97-6	0.5 mg/kg	110	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4294841)								
EB2208345-002	Anonymous		EP066: Total Polychlorinated biphenyls	----	1 mg/kg	# Not Determined	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4293435)								
EB2210657-002	Anonymous		EP068: gamma-BHC	58-89-9	0.5 mg/kg	108	70.0	136
			EP068: Heptachlor	76-44-8	0.5 mg/kg	107	65.0	130
			EP068: Aldrin	309-00-2	0.5 mg/kg	106	70.0	130
			EP068: Dieldrin	60-57-1	0.5 mg/kg	110	67.0	129
			EP068: Endrin	72-20-8	0.5 mg/kg	111	60.0	137
			EP068: 4,4'-DDT	50-29-3	0.5 mg/kg	113	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4296470)								
EB2210316-002	Anonymous		EP068: gamma-BHC	58-89-9	0.5 mg/kg	99.2	70.0	136
			EP068: Heptachlor	76-44-8	0.5 mg/kg	106	65.0	130
			EP068: Aldrin	309-00-2	0.5 mg/kg	105	70.0	130
			EP068: Dieldrin	60-57-1	0.5 mg/kg	102	67.0	129
			EP068: Endrin	72-20-8	0.5 mg/kg	105	60.0	137
			EP068: 4,4'-DDT	50-29-3	0.5 mg/kg	111	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4293436)								
EB2210676-060	BH08-1		EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	107	66.0	132



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Work Order : EB2210676
Client : BUTLER PARTNERS PTY LTD
Project : 018-150M

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	SpikeRecovery(%)	Acceptable Limits (%)	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4293436) - continued							
EB2210676-060	BH08-1	EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	104	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4296469)							
EB2210316-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	109	66.0	132
		EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	104	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4296472)							
EB2210473-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	105	66.0	132
		EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	102	70.0	130
EP080/074: Total Petroleum Hydrocarbons (QCLot: 4292995)							
EB2210636-002	Anonymous	EP080: C6 - C9 Fraction	-----	8 mg/kg	89.0	70.0	130
EP080/074: Total Petroleum Hydrocarbons (QCLot: 4296468)							
EB2210316-002	Anonymous	EP071: C10 - C14 Fraction	-----	310 mg/kg	92.0	70.0	130
		EP071: C15 - C28 Fraction	-----	490 mg/kg	103	70.0	130
EP080/074: Total Petroleum Hydrocarbons (QCLot: 4296473)							
EB2210473-002	Anonymous	EP071: C10 - C14 Fraction	-----	310 mg/kg	108	70.0	130
		EP071: C15 - C28 Fraction	-----	490 mg/kg	102	70.0	130
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4292995)							
EB2210636-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	8 mg/kg	87.6	70.0	130
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4296468)							
EB2210316-002	Anonymous	EP071: >C10 - C16 Fraction	-----	450 mg/kg	98.5	70.0	130
		EP071: >C16 - C34 Fraction	-----	320 mg/kg	104	70.0	130
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4296473)							
EB2210473-002	Anonymous	EP071: >C10 - C16 Fraction	-----	450 mg/kg	106	70.0	130
		EP071: >C16 - C34 Fraction	-----	320 mg/kg	105	70.0	130
EP080: BTEXN (QCLot: 4292995)							
EB2210636-002	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	84.0	70.0	130
		EP080: Toluene	108-88-3	2 mg/kg	81.6	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4293004)							
EB2210636-006	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	107	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	99.1	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	97.9	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	86.5	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	107	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	101	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4293557)							
EB2210552-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	97.3	72.0	128



Sub-Matrix: SOIL

Sub-Matrix: SOIL						
			Matrix Spike (MS) Report			
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4293557) - continued						
EB2210552-002	Anonymous	EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	95.7	73.0 123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	97.5	67.0 130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	97.5	70.0 132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	127	68.0 136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	88.3	59.0 134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4293004)						
EB2210636-006	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	96.6	71.0 135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	98.0	69.0 132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	89.2	70.0 132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	93.2	71.0 131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	108	69.0 133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	86.8	72.0 129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	84.4	69.0 133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	99.6	64.0 136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	98.8	69.0 135
		EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.00125 mg/kg	96.0	66.0 139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	104	69.0 133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4293557)						
EB2210552-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	99.9	71.0 135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	85.2	69.0 132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	102	70.0 132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	92.0	71.0 131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	104	69.0 133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	92.8	72.0 129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	87.2	69.0 133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	88.4	64.0 136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	96.8	69.0 135
		EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.00125 mg/kg	90.0	66.0 139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	99.8	69.0 133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4293004)						
EB2210636-006	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	102	48.0 128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	113	70.0 130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	98.6	70.0 130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	102	70.0 130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	98.7	70.0 130



Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number			Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4293004) - continued							
EB2210636-006	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	90.4	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	88.8	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4293557)							
EB2210552-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	94.0	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	101	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	103	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	110	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	90.4	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	94.4	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4293004)							
EB2210636-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	73.9	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	104	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	109	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	78.3	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4293557)							
EB2210552-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	86.7	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	91.5	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	85.4	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	97.9	70.0	130



Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EB2210676	Page	: 1 of 10
Client	: BUTLER PARTNERS PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MS SUZANNE WALKER	Telephone	: +61-7-3243 7222
Project	: 018-150M	Date Samples Received	: 14-Apr-2022
Site	: 89 Macarthur Ave, Hamilton	Issue Date	: 28-Apr-2022
Sampler	: RICHARD PEARCE	No. of samples received	: 102
Order number	: BP202052	No. of samples analysed	: 39

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- NO Method Blank value outliers occur.
- Duplicate outliers exist - please see following pages for full details.
- Laboratory Control outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, NO surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- NO Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- NO Quality Control Sample Frequency Outliers exist.



Page : 2 of 10
Work Order : EB2210676
Client : BUTLER PARTNERS PTY LTD
Project : 018-150M

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005(ED093)T: Total Metals by ICP-AES	EB2210676--050	BH07-1	Zinc	7440-66-6	66.7 %	0% - 50%	RPD exceeds LOR based limits
Laboratory Control Spike (LCS) Recoveries							
EG035T: Total Recoverable Mercury by FIMS	QC-MRG2-42934860 ---		Mercury	7439-97-6	128 %	70.0-125%	Recovery greater than upper control limit
Matrix Spike (MS) Recoveries							
EG005(ED093)T: Total Metals by ICP-AES	EB2210636--002	Anonymous	Chromium	7440-47-3	48.9 %	70.0-130%	Recovery less than lower data quality objective
EG005(ED093)T: Total Metals by ICP-AES	EB2210636--002	Anonymous	Lead	7439-92-1	28.0 %	70.0-130%	Recovery less than lower data quality objective

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method		Sample Date		Extraction / Preparation		Analysis			
Container / Client Sample ID(s)				Date extracted	Due for extraction	Evaluation	Due for analysis	Evaluation	
EA055: Moisture Content									
Soil Glass Jar - Unpreserved (EA055) BH07-1			12-Apr-2022				20-Apr-2022	26-Apr-2022	✓
Soil Glass Jar - Unpreserved (EA055) BH13-1			13-Apr-2022				20-Apr-2022	27-Apr-2022	✓



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

Method		Extraction / Preparation				Analysis		
Container / Client Sample ID(s)		Sample Date	Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)		12-Apr-2022	----	----	----	20-Apr-2022	26-Apr-2022	✓
BH01-1, BH01-2, BH01-3, BH02-2, BH02-5, BH02-7, BH03-1, BH03-2, BH03-4, BH03-6, BH04-1, BH04-2, BH05-1, BH06-1, BH06-2, BH06-4, BH07-2, BH07-4, BH08-1, BH08-3, BH09-1, BH09-2, BH09-3, BH11-1								
Soil Glass Jar - Unpreserved (EA055)								
BH11-2, BH11-7, BH12-3, BH12-5, BH13-2, BH13-5								



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

Method		Sample Date	Extraction / Preparation		Analysis			
Container / Client Sample ID(s)	Date extracted		Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EG005(ED093) T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)		12-Apr-2022	20-Apr-2022	09-Oct-2022	✓	23-Apr-2022	09-Oct-2022	✓
BH03-1, BH06-1, BH11-1								
Soil Glass Jar - Unpreserved (EG005T)		12-Apr-2022	21-Apr-2022	09-Oct-2022	✓	21-Apr-2022	09-Oct-2022	✓
BH01-2, BH02-1, BH02-5, BH03-2, BH03-6, BH05-2, BH06-4, BH07-4, BH08-3, BH09-1, BH09-3								
Soil Glass Jar - Unpreserved (EG005T)		13-Apr-2022	20-Apr-2022	10-Oct-2022	✓	23-Apr-2022	10-Oct-2022	✓
BH13-1								
Soil Glass Jar - Unpreserved (EG005T)		13-Apr-2022	21-Apr-2022	10-Oct-2022	✓	21-Apr-2022	10-Oct-2022	✓
BH11-3, BH12-1, BH12-5, BH13-5								



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

Method		Sample Date	Extraction / Preparation		Analysis			
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)	BH03-1, BH06-1, BH11-1	12-Apr-2022	20-Apr-2022	10-May-2022	✓	23-Apr-2022	10-May-2022	✓
		12-Apr-2022	21-Apr-2022	10-May-2022	✓	22-Apr-2022	10-May-2022	✓
Soil Glass Jar - Unpreserved (EG035T)	BH01-2, BH02-1, BH02-5, BH03-2, BH03-6, BH05-2, BH06-4, BH07-4, BH08-3, BH09-1, BH09-3	13-Apr-2022	20-Apr-2022	11-May-2022	✓	23-Apr-2022	11-May-2022	✓
		13-Apr-2022	21-Apr-2022	11-May-2022	✓	22-Apr-2022	11-May-2022	✓
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066)	BH02-1	12-Apr-2022	21-Apr-2022	26-Apr-2022	✓	22-Apr-2022	31-May-2022	✓
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068)	BH01-1, BH03-2, BH05-1, BH07-1, BH09-2	12-Apr-2022	21-Apr-2022	26-Apr-2022	✓	22-Apr-2022	31-May-2022	✓
Soil Glass Jar - Unpreserved (EP068)	BH11-2	13-Apr-2022	21-Apr-2022	27-Apr-2022	✓	22-Apr-2022	31-May-2022	✓



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

Method		Sample Date	Extraction / Preparation		Evaluation	Analysis	
Container / Client Sample ID(s)	Date extracted		Due for extraction	Date analysed		Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH03-1, BH04-2, BH08-1, BH11-1	BH03-2, BH06-1, BH09-2,	12-Apr-2022	21-Apr-2022	26-Apr-2022	✓	22-Apr-2022	31-May-2022
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH11-7, BH12-3	BH12-3	13-Apr-2022	21-Apr-2022	27-Apr-2022	✓	22-Apr-2022	31-May-2022
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
BH03-1, BH06-1, BH11-1	BH04-2, BH07-1,	12-Apr-2022	20-Apr-2022	26-Apr-2022	✓	22-Apr-2022	26-Apr-2022
Soil Glass Jar - Unpreserved (EP071)							
BH03-1, BH06-1, BH11-1	BH04-2, BH07-1,	12-Apr-2022	21-Apr-2022	26-Apr-2022	✓	22-Apr-2022	31-May-2022
Soil Glass Jar - Unpreserved (EP080)							
BH13-1		13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	22-Apr-2022	27-Apr-2022
Soil Glass Jar - Unpreserved (EP071)							
BH13-1		13-Apr-2022	21-Apr-2022	27-Apr-2022	✓	22-Apr-2022	31-May-2022
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
BH03-1, BH06-1, BH11-1	BH04-2, BH07-1,	12-Apr-2022	20-Apr-2022	26-Apr-2022	✓	22-Apr-2022	26-Apr-2022
Soil Glass Jar - Unpreserved (EP071)							
BH03-1, BH06-1, BH11-1	BH04-2, BH07-1,	12-Apr-2022	21-Apr-2022	26-Apr-2022	✓	22-Apr-2022	31-May-2022
Soil Glass Jar - Unpreserved (EP080)							
BH13-1		13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	22-Apr-2022	27-Apr-2022
Soil Glass Jar - Unpreserved (EP071)							
BH13-1		13-Apr-2022	21-Apr-2022	27-Apr-2022	✓	22-Apr-2022	31-May-2022
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
BH03-1, BH06-1, BH11-1	BH04-2, BH07-1,	12-Apr-2022	20-Apr-2022	26-Apr-2022	✓	22-Apr-2022	26-Apr-2022
Soil Glass Jar - Unpreserved (EP080)							
BH13-1		13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	22-Apr-2022	27-Apr-2022



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

Method		Sample Date	Extraction / Preparation		Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Date analysed	Due for analysis
EP231A: Perfluoroalkyl Sulfonic Acids						
HDPE Soil Jar (EP231X)	BH03-1	12-Apr-2022	20-Apr-2022	09-Oct-2022	27-Apr-2022	30-May-2022
				✓		✓
EP231B: Perfluoroalkyl Carboxylic Acids						
HDPE Soil Jar (EP231X)	BH03-1	12-Apr-2022	20-Apr-2022	09-Oct-2022	27-Apr-2022	30-May-2022
				✓		✓
EP231C: Perfluoroalkyl Sulfonamides						
HDPE Soil Jar (EP231X)	BH03-1	12-Apr-2022	20-Apr-2022	09-Oct-2022	27-Apr-2022	30-May-2022
				✓		✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids						
HDPE Soil Jar (EP231X)	BH03-1	12-Apr-2022	20-Apr-2022	09-Oct-2022	27-Apr-2022	30-May-2022
				✓		✓
EP231P: PFAS Sums						
HDPE Soil Jar (EP231X)	BH03-1	12-Apr-2022	20-Apr-2022	09-Oct-2022	27-Apr-2022	30-May-2022
				✓		✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification	
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	7	55	12.73	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	5	35	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	15	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	4	29	13.79	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	5	41	12.20	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	6	44	13.64	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	33	12.12	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	3	35	8.57	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	15	13.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	29	6.90	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	41	7.32	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	44	6.82	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	33	6.06	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	3	35	8.57	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	15	13.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	29	6.90	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	41	7.32	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	44	6.82	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	33	6.06	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	3	35	8.57	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	15	13.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	29	6.90	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	41	7.32	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	44	6.82	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	33	6.06	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Page : 9 of 10
Work Order : EB2210676
Client : BUTLER PARTNERS PTY LTD
Project : 018-150M

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatle Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap. Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).



Preparation Methods		Method	Matrix	Method Descriptions
Methanolic Extraction of Soils for Purge and Trap		ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids		ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
QuEChERS Extraction of Solids		ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EB2210676

Client : BUTLER PARTNERS PTY LTD Contact : MS SUZANNE WALKER Address : PO BOX 2267 FORTITUDE VALLEY BC QLD, AUSTRALIA 4006 E-mail : skwalker@butlerpartners.com.au Telephone : +61 07 3852 3800 Facsimile : +61 07 3852 3808 Project : 018-150M Order number : BP202052 C-O-C number : 1 Site : 89 Macarthur Ave, Hamilton Sampler : RICHARD PEARCE	Laboratory : Environmental Division Brisbane Contact : Kimberly Hilton-Barber Address : 2 Byth Street Stafford QLD Australia 4053 E-mail : k.hiltonbarber@alsglobal.com Telephone : +61-7-3243 7222 Facsimile : +61-7-3243 7218 Page : 1 of 6 Quote number : EB2016BUTPAR0003 (EN/222 (Planned event Tables)) QC Level : NEPM 2013 B3 & ALS QC Standard

Dates

Date Samples Received : 14-Apr-2022 19:15 Client Requested Due Date : 27-Apr-2022	Issue Date : 19-Apr-2022 Scheduled Reporting Date : 27-Apr-2022

Delivery Details

Mode of Delivery : Client Drop Off No. of coolers/boxes : 5 Receipt Detail : MEDIUM ESKY	Security Seal : Not Available Temperature : 8.1°C, 7.6°C, 6.5°C, 7.6°C, 10.3°C - Ice present No. of samples received / analysed : 102 / 39

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please be advised that where the sample container ID does not match the ID listed on the sample container lid, ALS has assigned the ID listed on the sample container lid. Please keep this in mind when reviewing your results.**
- **Please be advised that extra samples "BH05-7" and "BH05-8" were received in addition to the samples listed on the COC. These samples have been added to the end of the work order and will remain on hold unless we are otherwise advised.**
- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders EB2210676/ EB2210677 due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on ALSEnviro.Brisbane@alsglobal.com**
- Please be advised that where S-23 (SVOC/VOC) is referenced as well as PCB for sample BH02-1 (ALS#6), PCB has been assigned as per email directive 19/04/2022
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

- Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.



Sample Container(s)/Preservation Non-Compliances

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

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: SOIL

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-26 8 metals/TRH/BTEXN/PAH
EB2210676-001	12-Apr-2022 00:00	BH01-1		✓		✓	✓		
EB2210676-002	12-Apr-2022 00:00	BH01-2		✓				✓	
EB2210676-003	12-Apr-2022 00:00	BH01-3		✓				✓	
EB2210676-004	12-Apr-2022 00:00	BH01-4	✓						
EB2210676-005	12-Apr-2022 00:00	BH01-5	✓						
EB2210676-006	12-Apr-2022 00:00	BH02-1		✓	✓			✓	
EB2210676-007	12-Apr-2022 00:00	BH02-2		✓		✓			
EB2210676-008	12-Apr-2022 00:00	BH02-3		✓				✓	
EB2210676-009	12-Apr-2022 00:00	BH02-4	✓						
EB2210676-010	12-Apr-2022 00:00	BH02-5		✓				✓	
EB2210676-011	12-Apr-2022 00:00	BH02-6	✓						
EB2210676-012	12-Apr-2022 00:00	BH02-7		✓				✓	
EB2210676-013	12-Apr-2022 00:00	BH02-8	✓						
EB2210676-014	12-Apr-2022 00:00	BH02-9	✓						
EB2210676-015	12-Apr-2022 00:00	BH02-10	✓						
EB2210676-016	12-Apr-2022 00:00	BH02-11	✓						
EB2210676-017	12-Apr-2022 00:00	BH02-12	✓						
EB2210676-018	12-Apr-2022 00:00	BH03-1		✓			✓		✓
EB2210676-019	12-Apr-2022 00:00	BH03-2		✓		✓		✓	
EB2210676-020	12-Apr-2022 00:00	BH03-3	✓						
EB2210676-021	12-Apr-2022 00:00	BH03-4		✓				✓	
EB2210676-022	12-Apr-2022 00:00	BH03-5	✓						
EB2210676-023	12-Apr-2022 00:00	BH03-6		✓				✓	
EB2210676-024	12-Apr-2022 00:00	BH03-7	✓						
EB2210676-025	12-Apr-2022 00:00	BH03-8	✓						
EB2210676-026	12-Apr-2022 00:00	BH03-9	✓						
EB2210676-027	12-Apr-2022 00:00	BH03-10	✓						
EB2210676-028	12-Apr-2022 00:00	BH04-1		✓		✓			
EB2210676-029	12-Apr-2022 00:00	BH04-2		✓					✓
EB2210676-030	12-Apr-2022 00:00	BH04-3	✓						
EB2210676-031	12-Apr-2022 00:00	BH04-4		✓				✓	
EB2210676-032	12-Apr-2022 00:00	BH04-5	✓						
EB2210676-033	12-Apr-2022 00:00	BH04-6	✓						
EB2210676-034	12-Apr-2022 00:00	BH04-7	✓						
EB2210676-035	12-Apr-2022 00:00	BH04-8	✓						



			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-26 8 metals/TRH/BTEXN/PAH
EB2210676-036	12-Apr-2022 00:00	BH05-1		✓		✓			
EB2210676-037	12-Apr-2022 00:00	BH05-2		✓				✓	
EB2210676-038	12-Apr-2022 00:00	BH05-3	✓						
EB2210676-039	12-Apr-2022 00:00	BH05-4	✓						
EB2210676-040	12-Apr-2022 00:00	BH05-5	✓						
EB2210676-041	12-Apr-2022 00:00	BH05-6	✓						
EB2210676-042	12-Apr-2022 00:00	BH06-1		✓		✓			✓
EB2210676-043	12-Apr-2022 00:00	BH06-2		✓				✓	
EB2210676-044	12-Apr-2022 00:00	BH06-3	✓						
EB2210676-045	12-Apr-2022 00:00	BH06-4		✓				✓	
EB2210676-046	12-Apr-2022 00:00	BH06-5	✓						
EB2210676-047	12-Apr-2022 00:00	BH06-6	✓						
EB2210676-048	12-Apr-2022 00:00	BH06-7	✓						
EB2210676-049	12-Apr-2022 00:00	BH06-8	✓						
EB2210676-050	12-Apr-2022 00:00	BH07-1		✓		✓			
EB2210676-051	12-Apr-2022 00:00	BH07-2		✓				✓	
EB2210676-052	12-Apr-2022 00:00	BH07-3	✓						
EB2210676-053	12-Apr-2022 00:00	BH07-4		✓				✓	
EB2210676-054	12-Apr-2022 00:00	BH07-5	✓						
EB2210676-055	12-Apr-2022 00:00	BH07-6	✓						
EB2210676-056	12-Apr-2022 00:00	BH07-7	✓						
EB2210676-057	12-Apr-2022 00:00	BH07-8	✓						
EB2210676-058	12-Apr-2022 00:00	BH07-9	✓						
EB2210676-059	12-Apr-2022 00:00	BH07-10	✓						
EB2210676-060	12-Apr-2022 00:00	BH08-1		✓				✓	
EB2210676-061	12-Apr-2022 00:00	BH08-2	✓						
EB2210676-062	12-Apr-2022 00:00	BH08-3		✓		✓		✓	
EB2210676-063	12-Apr-2022 00:00	BH08-4		✓				✓	
EB2210676-064	12-Apr-2022 00:00	BH08-5	✓						
EB2210676-065	12-Apr-2022 00:00	BH08-6	✓						
EB2210676-066	12-Apr-2022 00:00	BH08-7	✓						
EB2210676-067	12-Apr-2022 00:00	BH08-8	✓						
EB2210676-068	12-Apr-2022 00:00	BH09-1		✓				✓	
EB2210676-069	12-Apr-2022 00:00	BH09-2		✓		✓		✓	
EB2210676-070	12-Apr-2022 00:00	BH09-3		✓				✓	
EB2210676-071	12-Apr-2022 00:00	BH09-4	✓						
EB2210676-072	12-Apr-2022 00:00	BH09-5	✓						
EB2210676-073	12-Apr-2022 00:00	BH09-6	✓						
EB2210676-074	12-Apr-2022 00:00	BH09-7	✓						
EB2210676-075	12-Apr-2022 00:00	BH09-8	✓						
EB2210676-076	12-Apr-2022 00:00	BH11-1		✓					✓



			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-26 8 metals/TRH/BTEXN/PAH
EB2210676-077	13-Apr-2022 00:00	BH11-2		✓		✓			
EB2210676-078	13-Apr-2022 00:00	BH11-3		✓				✓	
EB2210676-079	13-Apr-2022 00:00	BH11-4	✓						
EB2210676-080	13-Apr-2022 00:00	BH11-5	✓						
EB2210676-081	13-Apr-2022 00:00	BH11-6	✓						
EB2210676-082	13-Apr-2022 00:00	BH11-7		✓				✓	
EB2210676-083	13-Apr-2022 00:00	BH11-8	✓						
EB2210676-084	13-Apr-2022 00:00	BH11-9	✓						
EB2210676-085	13-Apr-2022 00:00	BH11-10	✓						
EB2210676-086	13-Apr-2022 00:00	BH12-1		✓				✓	
EB2210676-087	13-Apr-2022 00:00	BH12-2	✓						
EB2210676-088	13-Apr-2022 00:00	BH12-3		✓				✓	
EB2210676-089	13-Apr-2022 00:00	BH12-4	✓						
EB2210676-090	13-Apr-2022 00:00	BH12-5		✓				✓	
EB2210676-091	13-Apr-2022 00:00	BH12-6	✓						
EB2210676-092	13-Apr-2022 00:00	BH12-7	✓						
EB2210676-093	13-Apr-2022 00:00	BH12-8	✓						
EB2210676-094	13-Apr-2022 00:00	BH13-1		✓					
EB2210676-095	13-Apr-2022 00:00	BH13-2		✓				✓	
EB2210676-096	13-Apr-2022 00:00	BH13-3	✓						
EB2210676-097	13-Apr-2022 00:00	BH13-4	✓						
EB2210676-098	13-Apr-2022 00:00	BH13-5		✓				✓	
EB2210676-099	13-Apr-2022 00:00	BH13-6	✓						
EB2210676-100	13-Apr-2022 00:00	BH13-7	✓						
EB2210676-101	12-Apr-2022 00:00	BH05-7	✓						
EB2210676-102	12-Apr-2022 00:00	BH05-8	✓						

Matrix: SOIL

Laboratory sample ID Sampling date / time Sample ID

EB2210676-019	12-Apr-2022 00:00	BH03-2	SOIL - EP075 SIM PAH only SIM - PAH only	✓
EB2210676-050	12-Apr-2022 00:00	BH07-1	SOIL - S-05 TRH/BTEXN/8 Metals	✓
EB2210676-060	12-Apr-2022 00:00	BH08-1		✓
EB2210676-069	12-Apr-2022 00:00	BH09-2		✓

A5

14/04/22 19:15

ALS Environmental

PO Box 2267, Fortitude Valley BC Qld 4006
(22 Corunna Street, Albion Qld 4010)
Ph: (07) 3256 2900 Fax: (07) 3256 2901

Job No: _____
Site: _____

018-150M

Order No. _____

COC No. _____

BP202052

Australian Laboratory Services Pty Ltd
32 Shand Street, Stafford QLD 4053
Ph: (07) 3243 7222

Quotation Number:

EN/222/18 (Butler Partners)

Project Manager:

Suzanne Walker

Sampled By:

Richard Pearce

Results To:

Suzanne Walker (skwalker@butlerpartners.com.au)

Mike Melles (mmelles@butlerpartners.com.au)

Richard Pearce (rpearce@butlerpartners.com.au)

Relinquished

Mike Melles

Invoice To:

BPAccounts@butlerpartners.com.au

Date Sample Submitted to External Lab:

14 April 2022

Due Date:

Day TAT

Special Instructions:

Fire Ant Zone?

Yes - BIP-RIFA-G003

Lab Sample No.	Sample Reference	Sample Depth	Sample Type	No. of Jars/Vials	Date Sampled
1	BH01-1	0.0-0.15	Soil	1 Jar/ 1 PFAS	12-Apr-22
2	BH01-2	0.3-0.5	Soil	1 Jar	12-Apr-22
3	BH01-3	0.8-1.0	Soil	1 Jar	12-Apr-22
4	BH01-4	1.3-1.5	Soil	1 Jar	12-Apr-22
5	BH01-5	1.8-2.0	Soil	1 Jar	12-Apr-22
6	BH02-1	0.25-0.35	Soil	1 Jar	12-Apr-22
7	BH02-2	0.4-0.5	Soil	1 Jar	12-Apr-22
8	BH02-3	0.7-0.9	Soil	1 Jar	12-Apr-22
9	BH02-4	1.3-1.5	Soil	1 Jar	12-Apr-22
10	BH02-5	1.8-2.0	Soil	1 Jar	12-Apr-22
11	BH02-6	2.3-2.5	Soil	1 Jar	12-Apr-22
12	BH02-7	2.8-3.0	Soil	1 Jar	12-Apr-22
13	BH02-8	3.3-3.5	Soil	1 Jar	12-Apr-22
14	BH02-9	3.8-4.0	Soil	1 Jar	12-Apr-22
15	BH02-10	4.3-4.5	Soil	1 Jar	12-Apr-22
16	BH02-11	4.8-5.0	Soil	1 Jar	12-Apr-22
17	BH02-12	5.3-5.5	Soil	1 Jar	12-Apr-22
18	BH03-1	0.02-0.2	Soil	1 Jar/ 1 PFAS	12-Apr-22
19	BH03-2	0.3-0.5	Soil	1 Jar	12-Apr-22
20	BH03-3	0.8-1.0	Soil	1 Jar	12-Apr-22
21	BH03-4	1.3-1.5	Soil	1 Jar	12-Apr-22

Environmental Division
Brisbane
Work Order Reference
EB2210676



Telephone: +61-7-3243 7222

SD
14/04/22 19:15
ALS Environmental

Quotation Number: EN222/18 (Butler Partners)

Project Manager: Suzanne Walker

Sampled By: Richard Pearce

Results To: Suzanne Walker (skwalker@butlerpartners.com.au)
Mike Melles (mmelles@butlerpartners.com.au)
Richard Pearce (rpearce@butlerpartners.com.au)
Mike Melles

Relinquished by: BP accounts@butlerpartners.com.au

Invoice To: 14 April 2022

Date Sample Submitted to External Lab:

Due Date: 5 Day TAT

Special Instructions:

Fire Ant Zone? Yes - BIP-RIFA-G003

Lab Sample No.	Sample Reference	Sample Depths	Sample Type	No. of Jars/Vials	Date Sampled	8 metals	TRH / BTEXN	TRH / BTEXN / 8 Metals	TRH / BTEXN / Pb	TRH / BTEXN / PAH	TRH / BTEXN / PAH / 8 Metals	PFAS Full Suite	OC / OP	PCBs	PAH (sum)	OC Pesticides	TRH / BTEXN / PAH / 8 Metals	pH and EC	Exchangeable Cations, ECOC and ESP	Total N (incl TKN and Nox)	Ammonia (NH3)	Neutral (D) Leach	Cr Sulfide	C-C ₁₉ /BTEXN	HOLD
22	BH03-5	1.8-2.0	Soil	1 Jar	12-Apr-22																				X
23	BH03-6	2.3-2.5	Soil	1 Jar	12-Apr-22	X																			X
24	BH03-7	2.8-3.0	Soil	1 Jar	12-Apr-22																				X
25	BH03-8	3.3-3.5	Soil	1 Jar	12-Apr-22																				X
26	BH03-9	3.8-4.0	Soil	1 Jar	12-Apr-22																				X
27	BH03-10	4.3-4.5	Soil	1 Jar	12-Apr-22																				X
28	BH04-1	0.1-0.3	Soil	1 Jar	12-Apr-22												X								
29	BH04-2	0.4-0.5	Soil	1 Jar	12-Apr-22	X										X									X
30	BH04-3	0.8-1.0	Soil	1 Jar	12-Apr-22																				
31	BH04-4	1.3-1.5	Soil	1 Jar	12-Apr-22	X																			X
32	BH04-5	1.8-2.0	Soil	1 Jar	12-Apr-22																				X
33	BH04-6	2.3-2.5	Soil	1 Jar	12-Apr-22																				X
34	BH04-7	2.8-3.0	Soil	1 Jar	12-Apr-22																				X
35	BH04-8	3.3-3.5	Soil	1 Jar	12-Apr-22																				
36	BH05-1	0.02-0.2	Soil	1 Jar/ 1 PFAS	12-Apr-22												X								
37	BH05-2	0.3-0.5	Soil	1 Jar	12-Apr-22	X																			
38	BH05-3	0.8-1.0	Soil	1 Jar	12-Apr-22																				
39	BH05-4	1.3-1.5	Soil	1 Jar	12-Apr-22																				
40	BH05-5	1.8-2.0	Soil	1 Jar	12-Apr-22																				
41	BH05-6	2.3-2.5	Soil	1 Jar	12-Apr-22																				
42	BH06-1	0.17-0.25	Soil	1 Jar/ 1 PFAS	12-Apr-22												X								

14/04/22 19:15

PO Box 2267, Fortitude Valley BC Qld 4006
(22 Corinna Street, Albion Qld 4010)
Ph: (07) 3256 2900 Fax: (07) 3256 2901

Job No:

018-150M

Site:

89 Macarthur Ave, Hamilton

Order No:

BP202052

COC No.

1

Australian Laboratory Services Pty Ltd
32 Shand Street, Stafford QLD 4053
Ph: (07) 3243 7222

Quotation Number:

EN/222/18 (Butler Partners)

Project Manager:

Suzanne Walker

Sampled By:

Richard Pearce

Results To:

Suzanne Walker (skwalker@butlerpartners.com.au)

Invoice To:

Mike Melles (mmelles@butlerpartners.com.au)

Relinquished by:

Richard Pearce (rpearce@butlerpartners.com.au)

Date Sample Submitted to External Lab:

14 April 2022

Due Date:

5 Day TAT

Special Instructions:

Yes - BIP-RIFA-G003

Fire Ant Zone?

Lab Sample No.	Sample Reference	Sample Depth	Sample Type	No. of Jars/Vials	Date Sampled	8 Metals	TRH / BTEXN	TRH / BTEXN / 8 Metals	TRH / BTEXN / PAH	TRH / BTEXN / PAH / OC / PCB / 8 Metals	PFAS Full Suite	OC / OP	PCBs	PAH	OC Pesticides	TRH / BTEXN / PAH / 8 Metals	pH and EC	Exchangeable Cations, ECOC and ESP	Total N (incl TKN and Nox)	Ammonia (NH3)	Neutral (Cl) Leach	Cr Suite	W-18	HOLD
43	BH06-2	0.3-0.5	Soil	1 Jar	12-Apr-22	x																		
44	BH06-3	0.8-1.0	Soil	1 Jar	12-Apr-22																			x
45	BH06-4	1.3-1.5	Soil	1 Jar	12-Apr-22	x																		
46	BH06-5	1.8-2.0	Soil	1 Jar	12-Apr-22																			x
47	BH06-6	2.3-2.5	Soil	1 Jar	12-Apr-22																			x
48	BH06-7	2.8-3.0	Soil	1 Jar	12-Apr-22																			x
49	BH06-8	3.3-3.5	Soil	1 Jar	12-Apr-22																			x
50	BH07-1	0.02-0.2	Soil	1 Jar	12-Apr-22		x																	
51	BH07-2	0.4-0.5	Soil	1 Jar	12-Apr-22	x																		
52	BH07-3	0.8-1.0	Soil	1 Jar	12-Apr-22																			x
53	BH07-4	1.3-1.5	Soil	1 Jar	12-Apr-22	x																		
54	BH07-5	1.8-2.0	Soil	1 Jar	12-Apr-22																			x
55	BH07-6	2.3-2.5	Soil	1 Jar	12-Apr-22																			x
56	BH07-7	2.8-3.0	Soil	1 Jar	12-Apr-22																			x
57	BH07-8	3.4-3.5	Soil	1 Jar	12-Apr-22																			x
58	BH07-9	3.8-4.0	Soil	1 Jar	12-Apr-22																			x
59	BH07-10	4.3-4.5	Soil	1 Jar	12-Apr-22																			x
60	BH08-1	0.02-0.2	Soil	1 Jar/ 1 PFAS	12-Apr-22	x																		
61	BH08-2	0.3-0.5	Soil	1 Jar	12-Apr-22																			x
62	BH08-3	0.8-1.0	Soil	1 Jar	12-Apr-22	x																		
63	BH08-4	1.3-1.5	Soil	1 Jar	12-Apr-22	x																		

PO Box 2267, Fortitude Valley BC Qld 4006
(22 Corinna Street, Albion Qld 4010)
Ph: (07) 3256 2900 Fax: (07) 3256 2901

Job No: 018-150M
Site: 89 Macarthur Ave, Hamilton

Order No: BP202052
COC No. 1

Australian Laboratory Services Pty Ltd
32 Shand Street, Stafford QLD 4053
Ph: (07) 3243 7222

Quotation Number: EN222/18 (Butler Partners)
Project Manager: Suzanne Walker
Sampled By: Richard Pearce
Results To: Suzanne Walker (skwalker@butlerpartners.com.au)
Mike Melles (mmelles@butlerpartners.com.au)
Richard Pearce (rpearce@butlerpartners.com.au)
Mike Melles
Relinquished by: Bfaccounts@butlerpartners.com.au
Invoice To: 14 April 2022
Date Sample Submitted to External Lab:
Due Date: 5 Day TAT
Special Instructions:
Fire Ant Zone?

Yes - BIP-RIFA-G003

Lab Sample No.	Sample Reference	Sample Depth	Sample Type	No. of Jars/Vials	Date Sampled	g metals	S-4	S-5	S-6	S-7	S-8	S-12	S-23	PAH	OC Pesticides	S-26	pH and EC	Exchangeable Cations, ECEC and ESP	Total N (incl TKN and Nox)	Ammonia (NH3)	Neutral (D) Leach	Cr Sulfate	W-18	Hold
64	BH08-5	1.8-2.0	Soil	1 Jar	12-Apr-22																			
65	BH08-6	2.3-2.5	Soil	1 Jar	12-Apr-22																			
66	BH08-7	2.8-3.0	Soil	1 Jar	12-Apr-22																			
67	BH08-8	3.3-3.5	Soil	1 Jar	12-Apr-22																			
68	BH09-1	0.02-0.2	Soil	1 Jar	12-Apr-22	x																		
69	BH09-2	0.3-0.5	Soil	1 Jar	12-Apr-22	x																		
70	BH09-3	0.8-1.0	Soil	1 Jar	12-Apr-22	x																		
71	BH09-4	1.3-1.5	Soil	1 Jar	12-Apr-22																			
72	BH09-5	1.8-2.0	Soil	1 Jar	12-Apr-22																			
73	BH09-6	2.3-2.5	Soil	1 Jar	12-Apr-22																			
74	BH09-7	2.8-3.0	Soil	1 Jar	12-Apr-22																			
75	BH09-8	3.3-3.5	Soil	1 Jar	12-Apr-22																			
76	BH11-1	0.25-0.5	Soil	1 Jar	12-Apr-22												x							
77	BH11-2	0.60-0.7	Soil	1 Jar/ 1 PFAS	13-Apr-22																			
78	BH11-3	0.9-1.0	Soil	1 Jar	13-Apr-22	x																		
79	BH11-4	1.3-1.5	Soil	1 Jar	13-Apr-22																			
80	BH11-5	1.8-2.0	Soil	1 Jar	13-Apr-22																			
81	BH11-6	2.3-2.5	Soil	1 Jar	13-Apr-22																			
82	BH11-7	2.8-3.0	Soil	1 Jar	13-Apr-22	x																		
83	BH11-8	3.3-3.5	Soil	1 Jar	13-Apr-22																			
84	BH11-9	3.8-4.0	Soil	1 Jar	13-Apr-22																			

PO Box 2267, Fortitude Valley BC Qld 4006
(22 Corinna Street, Albion Qld 4010)
Ph: (07) 3256 2900 Fax: (07) 3256 2801

Job No:
Site:

018-150M
89 Macarthur Ave, Hamilton

Order No:
COC No.

BP202052

Australian Laboratory Services Pty Ltd
32 Shand Street, Stafford QLD 4053
Ph: (07) 3243 7222

Quotation Number: EN122118 (Butler Partners)

Project Manager:

Suzanne Walker

Sampled By:

Richard Pearce

Results To:

Suzanne Walker (skwalker@butlerpartners.com.au)

Relinquished by:

Mike Melles (mmelles@butlerpartners.com.au)

Invoice To:

Richard Pearce (rpearce@butlerpartners.com.au)

Date Sample Submitted to External Lab:

Mike Melles

Due Date:

BPaccounts@butlerpartners.com.au

Special Instructions:

14 April 2022

Fire Ant Zone?

5 Day TAT

Yes - BIP-RIFA-G003

Lab Sample No.	Sample Reference	Sample Depths	Sample Type	No. of Jars/Vials	Date Sampled	8 metals	TRH / BTEXN	TRH / BTEXN / 8 Metals	TRH / BTEXN / Pb	TRH / BTEXN / PAH	TRH / BTEXN / PAH / OC / PCB / 8 Metals	PFAS Full Suite	OC / OP	S-23 PCBs	PAH (sum)	OC Pesticides	S-26 TRH / BTEXN / PAH / 8 Metals	pH and EC	Exchangeable Cations, ECEC and ESP	Total N (incl TKN and Nox)	Ammonia (NH3)	Neutral (Cl) Lead	C-Suite	C-Cu/BTEXN	HOLD
85	BH11-10	4.3-4.5	Soil	1 Jar	13-Apr-22																				
86	BH12-1	0.02-0.25	Soil	1 Jar/ 1 PFAS	13-Apr-22	x																			x
87	BH12-2	0.3-0.5	Soil	1 Jar	13-Apr-22																				x
88	BH12-3	0.8-1.0	Soil	1 Jar	13-Apr-22	x																			
89	BH12-4	1.3-1.5	Soil	1 Jar	13-Apr-22																				x
90	BH12-5	1.8-2.0	Soil	1 Jar	13-Apr-22	x																			x
91	BH12-6	2.3-2.5	Soil	1 Jar	13-Apr-22																				x
92	BH12-7	2.5-3.0	Soil	1 Jar	13-Apr-22																				x
93	BH12-8	3.3-3.5	Soil	1 Jar	13-Apr-22																				x
94	BH13-1	0.02-0.25	Soil	1 Jar	13-Apr-22																				
95	BH13-2	0.3-0.5	Soil	1 Jar	13-Apr-22	x																			
96	BH13-3	0.8-1.0	Soil	1 Jar	13-Apr-22																				x
97	BH13-4	1.3-1.5	Soil	1 Jar	13-Apr-22																				x
98	BH13-5	1.8-2.0	Soil	1 Jar	13-Apr-22	x																			
99	BH13-6	2.3-2.5	Soil	1 Jar	13-Apr-22																				x
100	BH13-7	2.8-3.0	Soil	1 Jar	13-Apr-22																				x
	BH13-8	3.3-3.5	Soil	1 Jar	13-Apr-22																				x
	BH14-1	0.02-0.25	Soil	1 Jar/ 1 PFAS	13-Apr-22																				
	BH14-2	0.3-0.5	Soil	1 Jar	13-Apr-22	x																			
	BH14-3	0.8-1.0	Soil	1 Jar	13-Apr-22																				
	BH14-4	1.3-1.5	Soil	1 Jar	13-Apr-22	x																			

101 34105-7 12.4.22
102 34105-8 12.4.22

CERTIFICATE OF ANALYSIS

Work Order	: EB2210677	Page	: 1 of 35
Client	: BUTLER PARTNERS PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MS SUZANNE WALKER	Contact	: Kimberly Hilton-Barber
Address	: PO BOX 2267 FORTITUDE VALLEY BC QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3852 3800	Telephone	: +61-7-3243 7222
Project	: 018-150M	Date Samples Received	: 14-Apr-2022 19:15
Order number	: BP202052	Date Analysis Commenced	: 20-Apr-2022
C-O-C number	: 1	Issue Date	: 03-May-2022 13:52
Sampler	: RICHARD PEARCE		
Site	: 89 Macarthur Ave, Hamilton		
Quote number	: EN/222 (Planned event Tables)		
No. of samples received	: 91		
No. of samples analysed	: 48		



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
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Mark Hallas	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Mark Hallas	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD



Page : 2 of 35
Work Order : EB2210677
Client : BUTLER PARTNERS PTY LTD
Project : 018-150M

General Comments

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

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders EB2210676/ EB2210677 due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on ALSEnviro.Brisbane@alsglobal.com**
- ALS is not NATA accredited for the analysis of Exchangeable Aluminium and Exchange Acidity in soils when performed under ALS Method ED005.
- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- 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+h) & 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.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above 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.
- EG005T (Total Metals by ICP-AES): BH19-5 (EB2210677-044) shows poor duplicate results due to sample heterogeneity. This has been confirmed by visual inspection.
- EP071-SV TRH: Sample 'EB2208345-002' shows matrix spike recovery outside of control limits due to sample heterogeneity. Confirmed by re-extraction and re-analysis.
- EP075(SIM) - PAH/Phenols (SIM): Sample 'EB2210342-007' shows poor duplicate results due to sample heterogeneity. Confirmed by visual inspection.
- ED006 (Exchangeable Cations on Alkaline Soils): Unable to calculate Magnesium/Potassium Ratio results for some samples as required Exchangeable Potassium results are less than the limit of reporting.
- EG005T- Total Metals by ICP-AES: Sample 'BH14-2' (EB2210677-003) shows poor duplicate results due to sample heterogeneity. Confirmed by visual inspection.
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		Sampling date / time		BH1(31		BH1(32		BH1(3		BH1- 31	
Compound	CAS Number	LOR	Unit	Result		Result		Result		Result		Result	
EA0- - : ° oisture Content 0.10													
° oisture Content		0.1	%										
° oisture Content		1.0	%										
E8 00- 5ED04) M: Total ° etals by ICPAES													
Arsenic	7440-38-2	5	mg/kg										
Cadmium	7440-43-9	1	mg/kg										
Chromium	7440-47-3	2	mg/kg										
Copper	7440-50-8	5	mg/kg										
Lead	7439-92-1	5	mg/kg										
Nickel	7440-02-0	2	mg/kg										
Ginc	7440-66-6	5	mg/kg										
E8 0) - T: Total Recoverable ° ercury by FI° S													
° ercury		7439-97-6	0.1	mg/kg									
EP06ZA: Organochlorine Pesticides 5DCM													
alpha3BHC	319-84-6	0.05	mg/kg										
Hexachlorobenzene 5HCBM	118-74-1	0.05	mg/kg										
beta3BHC	319-85-7	0.05	mg/kg										
gamma3BHC	58-89-9	0.05	mg/kg										
delta3BHC	319-86-8	0.05	mg/kg										
Heptachlor	76-44-8	0.05	mg/kg										
Aldrin	309-00-2	0.05	mg/kg										
Heptachlor epoxide	1024-57-3	0.05	mg/kg										
^ Total Chlordane 5sumM	----	0.05	mg/kg										
trans3Chlordane	5103-74-2	0.05	mg/kg										
alpha5Endosulfan	959-98-8	0.05	mg/kg										
cis3Chlordane	5103-71-9	0.05	mg/kg										
Dieldrin	60-57-1	0.05	mg/kg										
(.) 3DDE	72-55-9	0.05	mg/kg										
Endrin	72-20-8	0.05	mg/kg										
beta3Endosulfan	33213-65-9	0.05	mg/kg										
^ Endosulfan 5sumM	115-29-7	0.05	mg/kg										
(.) 3DDD	72-54-8	0.05	mg/kg										
Endrin aldehyde	7421-93-4	0.05	mg/kg										
Endosulfan sulfate	1031-07-8	0.05	mg/kg										
(.) 3DDT	50-29-3	0.2	mg/kg										



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH1(31)	BH1(32)	BH1(3)	BH1(3)	BH1- 31
Compound	CAS Number	LOR	Sampling date / time	Unit	EB22106773002	EB2210677300	EB2210677300-	EB2210677310
EP06ZA: Organochlorine Pesticides 50CM3Continued					Result	Result	Result	Result
Endrin ketone	53494-70-5	0.05		mg/kg	<0.05	333	333	<0.05
° ethoxychlor	72-43-5	0.2		mg/kg	<0.2	333	333	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05		mg/kg	<0.05	333	333	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05		mg/kg	<0.05	333	333	<0.05
EP07- 5S1: Polynuclear Aromatic Hydrocarbons		0-2						
Naphthalene	91-20-3	0.5		mg/kg	<0.5	333	333	<0.5
Acenaphthylene	208-96-8	0.5		mg/kg	<0.5	333	333	<0.5
Acenaphthene	83-32-9	0.5		mg/kg	<0.5	333	333	<0.5
Fluorene	86-73-7	0.5		mg/kg	<0.5	333	333	<0.5
Phenanthrene	85-01-8	0.5		mg/kg	<0.5	333	333	<0.5
Anthracene	120-12-7	0.5		mg/kg	<0.5	333	333	<0.5
Fluoranthene	206-44-0	0.5		mg/kg	<0.5	333	333	<0.5
Pyrene	129-00-0	0.5		mg/kg	<0.5	333	333	<0.5
Benz[a]anthracene	56-55-3	0.5		mg/kg	<0.5	333	333	<0.5
Chrysene	218-01-9	0.5		mg/kg	<0.5	333	333	<0.5
Benzofluoranthene	205-99-2	0.5		mg/kg	<0.5	333	333	<0.5
Benzokfluoranthene	207-08-9	0.5		mg/kg	<0.5	333	333	<0.5
Benzofluorene	50-32-8	0.5		mg/kg	<0.5	333	333	<0.5
Indeno[1,2,3-cd]pyrene	193-39-5	0.5		mg/kg	<0.5	333	333	<0.5
Dibenz[a,h]anthracene	53-70-3	0.5		mg/kg	<0.5	333	333	<0.5
Benzofluoranthene	191-24-2	0.5		mg/kg	<0.5	333	333	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5		mg/kg	<0.5	333	333	<0.5
^ Benzofluorene TEQ zeroM	----	0.5		mg/kg	<0.5	333	333	<0.5
^ Benzofluorene TEQ half LORM	----	0.5		mg/kg	<0.5	333	333	<0.5
^ Benzofluorene TEQ full LORM	----	0.5		mg/kg	<0.5	333	333	<0.5
EP0Z0/071: Total Petroleum Hydrocarbons								
C6 3C4 Fraction	----	10		mg/kg	<10	333	333	<10
C10 3C1(Fraction	----	50		mg/kg	<50	333	333	<50
C1- 3C2Z Fraction	----	100		mg/kg	<100	333	333	<100
C24 3C) 6 Fraction	----	100		mg/kg	<100	333	333	<100
^ C10 3C) 6 Fraction SumM	----	50		mg/kg	<100	333	333	<50
EP0Z0/071: Total Recoverable Hydrocarbons 3NEP° 201) Fractions								
C6 3C10 Fraction	C6_C10	10		mg/kg	<10	333	333	<10

Sub-Matrix: SOIL
Matrix: SOILM

Sub-Matrix: SOIL		Sample ID		BH1(3)		BH1(3)		BH1(3)		BH1- 3	
Matrix: SOILM		Sampling date / time		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00	
Compound		CAS Number	LOR	Unit	EB22106773002	Result	EB2210677300	Result	EB2210677300-	Result	EB22106773010
EP020/071: Total Recoverable Hydrocarbons 3NEP° 201 Fractions 3Continued											
^ C6 3C10 Fraction minus BTEX F1M		C6_C10-BTEX	10	mg/kg	3333		3333	<10	3333		<10
>C10 3C16 Fraction		----	50	mg/kg	3333		3333	<50	3333		<50
>C16 3C) (Fraction		----	100	mg/kg	3333		3333	120	3333		<100
>C) (3C(0 Fraction		----	100	mg/kg	3333		3333	<100	3333		<100
^ >C10 3C(0 Fraction 5umM		----	50	mg/kg	3333		3333	120	3333		<50
^ >C10 3C16 Fraction minus Naphthalene F2M		----	50	mg/kg	3333		3333	<50	3333		<50
EP020: BTEXN											
Benzene		71-43-2	0.2	mg/kg	3333		3333	<0.2	3333		<0.2
Toluene		108-88-3	0.5	mg/kg	3333		3333	<0.5	3333		<0.5
Ethylbenzene		100-41-4	0.5	mg/kg	3333		3333	<0.5	3333		<0.5
meta3& para3Xylene		108-38-3 106-42-3	0.5	mg/kg	3333		3333	<0.5	3333		<0.5
ortho3Xylene		95-47-6	0.5	mg/kg	3333		3333	<0.5	3333		<0.5
^ Sum of BTEX		----	0.2	mg/kg	3333		3333	<0.2	3333		<0.2
^ Total Xylenes		----	0.5	mg/kg	3333		3333	<0.5	3333		<0.5
Naphthalene		91-20-3	1	mg/kg	3333		3333	<1	3333		<1
EP062S: Organochlorine Pesticide Surrogate											
Dibromo3DE		21655-73-2	0.05	%	10)		3333		3333		-1.(
EP062T: Organophosphorus Pesticide Surrogate											
DEF		78-48-8	0.05	%	1) 6		3333		3333		--.4
EP07- 5S)° 1S: Phenolic Compound Surrogates											
Phenol3I6		13127-88-3	0.5	%	3333		110		3333		-(.0
23Chlorophenol3D(		93951-73-6	0.5	%	3333		11-		3333		--.1
2.(.63Tribromophenol		118-79-6	0.5	%	3333		11(		3333		(.0.2
EP07- 5S)° 1T: PAH Surrogates											
23Fluorobiphenyl		321-60-8	0.5	%	3333		22.Z		3333		-2.2
Anthracene3I10		1719-06-8	0.5	%	3333		10-		3333		-.)
(3Terphenyl3I1(		1718-51-0	0.5	%	3333		10)		3333		-7.-
EP020S: TPH3/MBTEX Surrogates											
1.23Dichloroethane3D(		17060-07-0	0.2	%	3333		3333		3333		27.4
Toluene3DZ		2037-26-5	0.2	%	3333		3333		3333		2).6
(3Bromofluorobenzene		460-00-4	0.2	%	3333		3333		3333		47.4



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		Sampling date / time		BH1-32		BH1-3		BH1631		BH1632		BH1631	
Compound	CAS Number	LOR	Unit	Result	EB22106773011	Result	EB22106773012	Result	EB22106773012	Result	EB22106773012	Result	EB22106773014	Result	EB22106773021
EA0-- : ° moisture Content															
° moisture Content	----	0.1	%		3333		3333		6.)		3333		3333		3333
EA0-- : ° moisture Content 5Dried @ 10-31 109CM															
° moisture Content	----	1.0	%		Z.2		7.4		3333		(.)		1.4		
E8 00-5ED04) M: Total ° etals by ICP3AES															
Arsenic	7440-38-2	5	mg/kg		16		<5		<5		1(		<5		<5
Cadmium	7440-43-9	1	mg/kg		<1		<1		<1		<1		<1		<1
Chromium	7440-47-3	2	mg/kg		2)		Z		4		12		12		6
Copper	7440-50-8	5	mg/kg		1)(		1(		4		1Z		1Z		<5
Lead	7439-92-1	5	mg/kg		(1		6		16		14		14		<5
Nickel	7440-02-0	2	mg/kg		1Z		-		7		Z		Z		6
Ginc	7440-66-6	5	mg/kg		100		2(		)6		2(		2(		11
E8 0) - T: Total Recoverable ° ercury by FI° S															
° ercury	7439-97-6	0.1	mg/kg		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1
EP06ZA: Organochlorine Pesticides 5DCM															
alpha3BHC	319-84-6	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
Hexachlorobenzene 5HCBM	118-74-1	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
beta3BHC	319-85-7	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
gamma3BHC	58-89-9	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
delta3BHC	319-86-8	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
Heptachlor	76-44-8	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
Aldrin	309-00-2	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
Heptachlor epoxide	1024-57-3	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
^ Total Chlordane 5sumM	----	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
trans3Chlordane	5103-74-2	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
alpha3Endosulfan	959-98-8	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
cis3Chlordane	5103-71-9	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
Dieldrin	60-57-1	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
(.) 3DDE	72-55-9	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
Endrin	72-20-8	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
beta3Endosulfan	33213-65-9	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
^ Endosulfan 5sumM	115-29-7	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
(.) 3DDD	72-54-8	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
Endrin aldehyde	7421-93-4	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333
Endosulfan sulfate	1031-07-8	0.05	mg/kg		3333		3333		<0.05		3333		3333		3333

Analytical Results

Sub-Matrix: SOIL 5Matrix: SOILM		Sample ID		BH1- 32		BH1- 3		BH1631		BH1632		BH1633	
		Sampling date / time		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	EB22106773011		EB22106773012		EB22106773012		EB22106773014		EB22106773021	
				Result		Result		Result		Result		Result	
EP06ZA: Organochlorine Pesticides 50CM3Continued													
(. ('DDT	50-29-3	0.2	mg/kg	3333		3333		<0.2		3333		3333	
Endrin ketone	53494-70-5	0.05	mg/kg	3333		3333		<0.05		3333		3333	
° ethoxychlor	72-43-5	0.2	mg/kg	3333		3333		<0.2		3333		3333	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	3333		3333		<0.05		3333		3333	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05	mg/kg	3333		3333		<0.05		3333		3333	
0-2													
EP07- 5S1° NB: Polynuclear Aromatic Hydrocarbons													
Naphthalene	91-20-3	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Acenaphthene	83-32-9	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Fluorene	86-73-7	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Phenanthrene	85-01-8	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Anthracene	120-12-7	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Fluoranthene	206-44-0	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Pyrene	129-00-0	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Benz[a]anthracene	56-55-3	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Chrysene	218-01-9	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Benzof[1,2-b]fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Benzok[1,2-b]fluoranthene	207-08-9	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Benzof[1,2-b]pyrene	50-32-8	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Indeno[1,2,3-cd]pyrene	193-39-5	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Dibenz[a,h]anthracene	53-70-3	0.5	mg/kg	<0.5		3333		3333		3333		3333	
Benzof[1,2,3-cd]pyrene	191-24-2	0.5	mg/kg	<0.5		3333		3333		3333		3333	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5		3333		3333		3333		3333	
^ Benzof[1,2,3-cd]pyrene TEQ 50M	----	0.5	mg/kg	<0.5		3333		3333		3333		3333	
^ Benzof[1,2,3-cd]pyrene TEQ 50M LORM	----	0.5	mg/kg	0.6		3333		3333		3333		3333	
^ Benzof[1,2,3-cd]pyrene TEQ 50M LORM	----	0.5	mg/kg	1.2		3333		3333		3333		3333	
EP0Z0/071: Total Petroleum Hydrocarbons													
C6 3C4 Fraction	----	10	mg/kg	<10		3333		<10		3333		3333	
C10 3C1(Fraction	----	50	mg/kg	<50		3333		<50		3333		3333	
C1- 3C2Z Fraction	----	100	mg/kg	<100		3333		<100		3333		3333	
C24 3C)6 Fraction	----	100	mg/kg	<100		3333		<100		3333		3333	
^ C10 3C)6 Fraction 50M	----	50	mg/kg	<50		3333		<50		3333		3333	
EP0Z0/071: Total Recoverable Hydrocarbons 3NEP° 201) Fractions													



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH1- 32	BH1- 3	BH1631	BH1632	BH1633
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result
EP0Z0/071: Total Recoverable Hydrocarbons 3NEP° 201) Fractions 3Continued								
C6 3C10 Fraction	C6_C10	10	mg/kg	<10				
^ C6 3C10 Fraction minus BTEX	C6_C10-BTEX	10	mg/kg	<10				
5F1M								
>C10 3C16 Fraction	----	50	mg/kg	<50				
>C16 3C) (Fraction	----	100	mg/kg	<100				
>C) (3C(0 Fraction	----	100	mg/kg	<100				
^ >C10 3C(0 Fraction SumM	----	50	mg/kg	<50				
^ >C10 3C16 Fraction minus Naphthalene	----	50	mg/kg	<50				
5F2M								
EP0Z0: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2				
Toluene	108-88-3	0.5	mg/kg	<0.5				
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5				
meta3& para3Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5				
ortho3Xylene	95-47-6	0.5	mg/kg	<0.5				
^ Sum of BTEX	----	0.2	mg/kg	<0.2				
^ Total Xylenes	----	0.5	mg/kg	<0.5				
Naphthalene	91-20-3	1	mg/kg	<1				
EP06ZS: Organochlorine Pesticide Surrogate								
Dibromo3DDE	21655-73-2	0.05	%	3333				
EP06ZT: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	3333				
EP07- 5SI° 18: Phenolic Compound Surrogates								
Phenol3I6	13127-88-3	0.5	%	116				
23Chlorophenol3D(	93951-73-6	0.5	%	104				
2, (.63Tri)bromophenol	118-79-6	0.5	%	42.0				
EP07- 5SI° 17: PAH Surrogates								
23Fluorobiphenyl	321-60-8	0.5	%	102				
Anthracene3I10	1719-06-8	0.5	%	117				
(3Terphenyl3I1(	1718-51-0	0.5	%	110				
EP0Z0S: TPH5/MBTEX Surrogates								
1.23Dichloroethane3D(	17060-07-0	0.2	%	Z6.-				
Toluene3DZ	2037-26-5	0.2	%	Z) .)				
(3Bromo)fluorobenzene	460-00-4	0.2	%	4(.-				



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		Sampling date / time		BH1731	BH1732	BH173	BH1Z31	BH1Z32
Compound	CAS Number	LOR	Unit	Result	EB2210677302(	EB2210677302-	EB22106773027	EB2210677302	EB2210677302	EB2210677302
EA0-- : ° oisture Content										
° oisture Content	---	0.1	%		333	- Z	333	333	333	333
° oisture Content	---	1.0	%		333	333	333	333	333	333
EA0-- : ° oisture Content Dried @ 10-31 109CM										
° oisture Content	---	1.0	%		- .0	333	333	333	333	333
E8 00-5ED04) M: Total ° etals by ICPAES										
Arsenic	7440-38-2	5	mg/kg		21	2	<5	<5	2	1Z
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		12	11	6	12	12	12
Copper	7440-50-8	5	mg/kg		1(	2)	<5	<5	14	1Z
Lead	7439-92-1	5	mg/kg		1-	1-	<5	<5	10	11
Nickel	7440-02-0	2	mg/kg		<2	<2	6	<2	<2	<2
Ginc	7440-66-6	5	mg/kg		<5	<5	1)	<5	<5	<5
E8 0) - T: Total Recoverable ° ercury by FI° S										
° ercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
EP06ZA: Organochlorine Pesticides DCM										
alphaBHC	319-84-6	0.05	mg/kg		333	<0.05	333	333	333	333
Hexachlorobenzene HCBM	118-74-1	0.05	mg/kg		333	<0.05	333	333	333	333
betaBHC	319-85-7	0.05	mg/kg		333	<0.05	333	333	333	333
gammaBHC	58-89-9	0.05	mg/kg		333	<0.05	333	333	333	333
deltaBHC	319-86-8	0.05	mg/kg		333	<0.05	333	333	333	333
Heptachlor	76-44-8	0.05	mg/kg		333	<0.05	333	333	333	333
Aldrin	309-00-2	0.05	mg/kg		333	<0.05	333	333	333	333
Heptachlor epoxide	1024-57-3	0.05	mg/kg		333	<0.05	333	333	333	333
^ Total Chlordane SumM	---	0.05	mg/kg		333	<0.05	333	333	333	333
transChlordane	5103-74-2	0.05	mg/kg		333	<0.05	333	333	333	333
alphaEndosulfan	959-98-8	0.05	mg/kg		333	<0.05	333	333	333	333
cisChlordane	5103-71-9	0.05	mg/kg		333	<0.05	333	333	333	333
Dieldrin	60-57-1	0.05	mg/kg		333	<0.05	333	333	333	333
(.'DDE	72-55-9	0.05	mg/kg		333	<0.05	333	333	333	333
Endrin	72-20-8	0.05	mg/kg		333	<0.05	333	333	333	333
betaEndosulfan	33213-65-9	0.05	mg/kg		333	<0.05	333	333	333	333
^ Endosulfan SumM	115-29-7	0.05	mg/kg		333	<0.05	333	333	333	333
(.'DDD	72-54-8	0.05	mg/kg		333	<0.05	333	333	333	333
Endrin aldehyde	7421-93-4	0.05	mg/kg		333	<0.05	333	333	333	333



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH1731	BH1732	BH1733	BH1731	BH1732	BH1733
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result	Result
EP06ZA: Organochlorine Pesticides EOCsContinued									
Endosulfan sulfate	1031-07-8	0.05		mg/kg	333	<0.05	333	333	333
(-) DDT	50-29-3	0.2		mg/kg	333	<0.2	333	333	333
Endrin ketone	53494-70-5	0.05		mg/kg	333	<0.05	333	333	333
° ethoxychlor	72-43-5	0.2		mg/kg	333	<0.2	333	333	333
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05		mg/kg	333	<0.05	333	333	333
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05		mg/kg	333	<0.05	333	333	333
	0-2								
EP07- 5S ¹ N ⁸ : Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5		mg/kg	<0.5	333	333	333	<0.5
Acenaphthylene	208-96-8	0.5		mg/kg	<0.5	333	333	333	<0.5
Acenaphthene	83-32-9	0.5		mg/kg	<0.5	333	333	333	<0.5
Fluorene	86-73-7	0.5		mg/kg	<0.5	333	333	333	<0.5
Phenanthrene	85-01-8	0.5		mg/kg	<0.5	333	333	333	<0.5
Anthracene	120-12-7	0.5		mg/kg	<0.5	333	333	333	<0.5
Fluoranthene	206-44-0	0.5		mg/kg	<0.5	333	333	333	<0.5
Pyrene	129-00-0	0.5		mg/kg	<0.5	333	333	333	<0.5
Benz[a]anthracene	56-55-3	0.5		mg/kg	<0.5	333	333	333	<0.5
Chrysene	218-01-9	0.5		mg/kg	<0.5	333	333	333	<0.5
Benzo[b]fluoranthene	205-99-2	0.5		mg/kg	<0.5	333	333	333	<0.5
Benzo[k]fluoranthene	207-08-9	0.5		mg/kg	<0.5	333	333	333	<0.5
Benzo[a]pyrene	50-32-8	0.5		mg/kg	<0.5	333	333	333	<0.5
Indeno[1,2,3-cd]pyrene	193-39-5	0.5		mg/kg	<0.5	333	333	333	<0.5
Dibenz[a,h]anthracene	53-70-3	0.5		mg/kg	<0.5	333	333	333	<0.5
Benzo[ghi]perylene	191-24-2	0.5		mg/kg	<0.5	333	333	333	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5		mg/kg	<0.5	333	333	333	<0.5
^ Benzo[a]pyrene TEQ zeroM	----	0.5		mg/kg	<0.5	333	333	333	<0.5
^ Benzo[a]pyrene TEQ half LORM	----	0.5		mg/kg	0.6	333	333	333	0.6
^ Benzo[a]pyrene TEQ full LORM	----	0.5		mg/kg	1.2	333	333	333	1.2
EP0Z0/071: Total Petroleum Hydrocarbons									
C6 3C4 Fraction	----	10		mg/kg	333	<10	333	<10	333
C10 3C1(Fraction	----	50		mg/kg	333	<50	333	<50	333
C1- 3C2Z Fraction	----	100		mg/kg	333	<100	333	<100	333
C24 3C) 6 Fraction	----	100		mg/kg	333	<100	333	<100	333
^ C10 3C) 6 Fraction SumM	----	50		mg/kg	333	<50	333	<50	333



Analytical Results

Sub-Matrix: SOIL 5Matrix: SOILM		Sample ID			BH1731	BH1732	BH173	BH1731	BH1732
		Sampling date / time			13-Apr-2022 00:00	13-Apr-2022 00:00	13-Apr-2022 00:00	13-Apr-2022 00:00	13-Apr-2022 00:00
Compound	CAS Number	LOR	Unit	EB2210677302(	EB2210677302-	EB22106773027	EB221067730) 2	EB221067730))	
					Result	Result	Result	Result	
EP020/071: Total Recoverable Hydrocarbons 3NEP [®] 201) Fractions									
C6 3C10 Fraction	C6_C10	10	mg/kg	3333	<10	3333	<10	3333	
^ C6 3C10 Fraction minus BTEX	C6_C10-BTEX	10	mg/kg	3333	<10	3333	<10	3333	
5F1M									
>C10 3C16 Fraction	----	50	mg/kg	3333	<50	3333	<50	3333	
>C16 3C) (Fraction	----	100	mg/kg	3333	<100	3333	<100	3333	
>C) (3C(0 Fraction	----	100	mg/kg	3333	<100	3333	<100	3333	
^ >C10 3C(0 Fraction 5sumM	----	50	mg/kg	3333	<50	3333	<50	3333	
^ >C10 3C16 Fraction minus Naphthalene	----	50	mg/kg	3333	<50	3333	<50	3333	
5F2M									
EP020: BTEXN									
Benzene	71-43-2	0.2	mg/kg	3333	<0.2	3333	<0.2	3333	
Toluene	108-88-3	0.5	mg/kg	3333	<0.5	3333	<0.5	3333	
Ethylbenzene	100-41-4	0.5	mg/kg	3333	<0.5	3333	<0.5	3333	
meta3& para3Kylene	108-38-3 106-42-3	0.5	mg/kg	3333	<0.5	3333	<0.5	3333	
ortho3Kylene	95-47-6	0.5	mg/kg	3333	<0.5	3333	<0.5	3333	
^ Sum of BTEX	----	0.2	mg/kg	3333	<0.2	3333	<0.2	3333	
^ Total Xylenes	----	0.5	mg/kg	3333	<0.5	3333	<0.5	3333	
Naphthalene	91-20-3	1	mg/kg	3333	<1	3333	<1	3333	
EP2) 1A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid	375-73-5	0.0002	mg/kg	<0.0002	3333	3333	3333	3333	
5PFB5M									
Perfluoropentane sulfonic acid	2706-91-4	0.0002	mg/kg	<0.0002	3333	3333	3333	3333	
5PFPe5M									
Perfluorohexane sulfonic acid	355-46-4	0.0002	mg/kg	<0.0002	3333	3333	3333	3333	
5PFHx5M									
Perfluoroheptane sulfonic acid	375-92-8	0.0002	mg/kg	<0.0002	3333	3333	3333	3333	
5PFHp5M									
Perfluorooctane sulfonic acid	1763-23-1	0.0002	mg/kg	<0.0002	3333	3333	3333	3333	
5PFOSM									
Perfluorodecane sulfonic acid	335-77-3	0.0002	mg/kg	<0.0002	3333	3333	3333	3333	
5PFDSM									
EP2) 1B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid 5PFBAM	375-22-4	0.001	mg/kg	<0.001	3333	3333	3333	3333	
Perfluoropentanoic acid 5PFPeAM	2706-90-3	0.0002	mg/kg	<0.0002	3333	3333	3333	3333	
Perfluorohexanoic acid 5PFHxAM	307-24-4	0.0002	mg/kg	<0.0002	3333	3333	3333	3333	



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH1731	BH1732	BH173	BH1731	BH1732
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result
EP2) 1B: Perfluoroalkyl Carboxylic Acids 3Continued								
Perfluoroheptanoic acid PFHpAM	375-85-9	0.0002		mg/kg	<0.0002	3333	3333	3333
Perfluorooctanoic acid PFOAM	335-67-1	0.0002		mg/kg	<0.0002	3333	3333	3333
Perfluorononanoic acid PFNAM	375-95-1	0.0002		mg/kg	<0.0002	3333	3333	3333
Perfluorodecanoic acid PFDAM	335-76-2	0.0002		mg/kg	<0.0002	3333	3333	3333
Perfluoroundecanoic acid PFUDAM	2058-94-8	0.0002		mg/kg	<0.0002	3333	3333	3333
Perfluorododecanoic acid PFDDAM	307-55-1	0.0002		mg/kg	<0.0002	3333	3333	3333
Perfluorotridecanoic acid PFTriDAM	72629-94-8	0.0002		mg/kg	<0.0002	3333	3333	3333
Perfluorotetradecanoic acid PFTeDAM	376-06-7	0.0005		mg/kg	<0.0005	3333	3333	3333
EP2) 1C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide FOSAM	754-91-6	0.0002		mg/kg	<0.0002	3333	3333	3333
N ³ ethyl perfluorooctane sulfonamide F eFOSAM	31506-32-8	0.0005		mg/kg	<0.0005	3333	3333	3333
N ³ ethyl perfluorooctane sulfonamide EtFOSAM	4151-50-2	0.0005		mg/kg	<0.0005	3333	3333	3333
N ³ ethyl perfluorooctane sulfonamidoethanol F eFOSEM	24448-09-7	0.0005		mg/kg	<0.0005	3333	3333	3333
N ³ ethyl perfluorooctane sulfonamidoethanol EtFOSEM	1691-99-2	0.0005		mg/kg	<0.0005	3333	3333	3333
N ³ ethyl perfluorooctane sulfonamidoacetic acid F eFOSAAM	2355-31-9	0.0002		mg/kg	<0.0002	3333	3333	3333
N ³ ethyl perfluorooctane sulfonamidoacetic acid EtFOSAAM	2991-50-6	0.0002		mg/kg	<0.0002	3333	3333	3333
EP2) 1D: 5:2MFluorotelomer Sulfonic Acids								
(:2 Fluorotelomer sulfonic acid F :2 FTSM	757124-72-4	0.0005		mg/kg	<0.0005	3333	3333	3333
6:2 Fluorotelomer sulfonic acid 6:2 FTSM	27619-97-2	0.0005		mg/kg	<0.0005	3333	3333	3333
Z:2 Fluorotelomer sulfonic acid Z:2 FTSM	39108-34-4	0.0005		mg/kg	<0.0005	3333	3333	3333



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH1731	BH1732	BH173	BH1731	BH1732
Compound	CAS Number	LOR	Unit	Sampling date / time	Result	Result	Result	Result
EP2) 1D: 5n:2MFluorotelomer Sulfonic Acids 3Continued								
10:2 Fluorotelomer sulfonic acid	120226-60-0	0.0005	mg/kg	13-Apr-2022 00:00	EB2210677302(Result	EB2210677302- Result	EB2210677302 Result	EB2210677302 Result
510:2 FTSM					<0.0005	3333	3333	3333
EP2) 1P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg		<0.0002	3333	3333	3333
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	3333	3333	3333
Sum of PFAS 5WA DER ListM	----	0.0002	mg/kg		<0.0002	3333	3333	3333
EP06ZS: Organochlorine Pesticide Surrogate								
DibromoDDE	21655-73-2	0.05	%		3333	107	3333	3333
EP06ZT: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%		3333	1) 1	3333	3333
EP07- 5SI° 16: Phenolic Compound Surrogates								
Phenol346	13127-88-3	0.5	%		112	3333	3333	116
23Chlorophenol3D(	93951-73-6	0.5	%		110	3333	3333	117
2, (.63Tribromophenol	118-79-6	0.5	%		102	3333	3333	102
EP07- 5SI° M: PAH Surrogates								
23Fluorobiphenyl	321-60-8	0.5	%		24.2	3333	3333	44.0
Anthracene3410	1719-06-8	0.5	%		10(	3333	3333	107
(3Terphenyl341(	1718-51-0	0.5	%		44.6	3333	3333	101
EP0Z0S: TPH5/MBTEX Surrogates								
1,23Dichloroethane3D(	17060-07-0	0.2	%		3333	26.2	41.2	3333
Toluene3DZ	2037-26-5	0.2	%		3333	21.7	27.4	3333
(3Bromofluorobenzene	460-00-4	0.2	%		3333	42.2	42.2	3333
EP2) 1S: PFAS Surrogate								
1) C(3PFOS	----	0.0002	%		10(	3333	3333	3333
1) CZ3FOA	-----	0.0002	%		110	3333	3333	3333

Analytical Results

Sub-Matrix: SOIL		Sample ID		BH123		BH123		BH123		BH1431		BH1432	
Matrix: SOILM		Sampling date / time		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	EB221067730) (		EB221067730) -		EB221067730) 4		EB221067730) (0		EB221067730) (1	
				Result		Result		Result		Result		Result	
EA0-- : ° oisture Content				7.(		3333		3333		3333		3333	
EA0-- : ° oisture Content 5Dried @ 10- 31 109CM				3333		7.0		3333		3333		3333	
° oisture Content				3333		3333		1(. 2		(. 4		- 2	
E8 00- 5ED04) M: Total ° etals by ICP3AES				2(		3333		-		12		22	
Arsenic				7440-38-2		5		mg/kg		3333		22	
Cadmium				7440-43-9		1		mg/kg		3333		<1	
Chromium				7440-47-3		2		mg/kg		3333		17	
Copper				7440-50-8		5		mg/kg		3333		26	
Lead				7439-92-1		5		mg/kg		3333		11	
Nickel				7440-02-0		2		mg/kg		3333		<2	
Ginc				7440-66-6		5		mg/kg		3333		<5	
E8 0) - T: Total Recoverable ° ercury by FI° S				<0.1		3333		<0.1		<0.1		<0.1	
° ercury				7439-97-6		0.1		mg/kg		3333		<0.5	
EP07- 5SI° NB: Polynuclear Aromatic Hydrocarbons				91-20-3		0.5		mg/kg		3333		<0.5	
Naphthalene				208-96-8		0.5		mg/kg		3333		<0.5	
Acenaphthylene				83-32-9		0.5		mg/kg		3333		<0.5	
Acenaphthene				86-73-7		0.5		mg/kg		3333		<0.5	
Fluorene				85-01-8		0.5		mg/kg		3333		<0.5	
Phenanthrene				120-12-7		0.5		mg/kg		3333		<0.5	
Anthracene				206-44-0		0.5		mg/kg		3333		<0.5	
Fluoranthene				129-00-0		0.5		mg/kg		3333		<0.5	
Pyrene				56-55-3		0.5		mg/kg		3333		<0.5	
Benz5aMntracene				218-01-9		0.5		mg/kg		3333		<0.5	
Chrysene				205-99-2		0.5		mg/kg		3333		<0.5	
Benzof5+JMuoranthene				207-08-9		0.5		mg/kg		3333		<0.5	
Benzof5Muoranthene				50-32-8		0.5		mg/kg		3333		<0.5	
Benzof5Myrene				193-39-5		0.5		mg/kg		3333		<0.5	
Indenof5(. 2.) .cdMpyrene				53-70-3		0.5		mg/kg		3333		<0.5	
Dibenzf5a.hMntracene				191-24-2		0.5		mg/kg		3333		<0.5	
Benzof5g.h.iMpyrene				Sum of polycyclic aromatic hydrocarbons		0.5		mg/kg		3333		<0.5	
^ Sum of polycyclic aromatic hydrocarbons				Benzof5aMpyrene TEQ 5zerom		0.5		mg/kg		3333		<0.5	
^ Benzof5aMpyrene TEQ 5zerom				Benzof5aMpyrene TEQ 5half LORM		0.5		mg/kg		3333		0.6	

Analytical Results

Sub-Matrix: SOIL						Sample ID	
Matrix: SOILM							
Compound	CAS Number	LOR	BH1Z3	BH1Z3	BH1Z3	BH1431	BH1432
	Sampling date / time		13-Apr-2022 00:00	13-Apr-2022 00:00	13-Apr-2022 00:00	13-Apr-2022 00:00	13-Apr-2022 00:00
Unit	Result	Result	EB221067730) (	EB221067730) -	EB221067730) 4	EB221067730(0	EB221067730(1
EP07- 5S1° M8: Polynuclear Aromatic Hydrocarbons 3 Continued							
^ Benzo(a)Pyrene TEQ & LORM	----	0.5	mg/kg	3333	3333	3333	1.2
EP0Z0/071: Total Petroleum Hydrocarbons							
C6 3C4 Fraction	-----	10	mg/kg	<10	3333	3333	<10
C10 3C1(Fraction	-----	50	mg/kg	<50	3333	3333	<50
C1- 3C2Z Fraction	-----	100	mg/kg	<100	3333	3333	<100
C24 3C) 6 Fraction	-----	100	mg/kg	<100	3333	3333	<100
^ C10 3C) 6 Fraction SumM	-----	50	mg/kg	<50	3333	3333	<50
EP0Z0/071: Total Recoverable Hydrocarbons 3NEP° 201) Fractions							
C6 3C10 Fraction	C6_C10	10	mg/kg	<10	3333	3333	<10
^ C6 3C10 Fraction minus BTEX	C6_C10-BTEX	10	mg/kg	<10	3333	3333	<10
5F1M							
>C10 3C16 Fraction	-----	50	mg/kg	<50	3333	3333	<50
>C16 3C) (Fraction	-----	100	mg/kg	<100	3333	3333	<100
>C) (3C(0 Fraction	-----	100	mg/kg	<100	3333	3333	<100
^ >C10 3C(0 Fraction SumM	-----	50	mg/kg	<50	3333	3333	<50
^ >C10 3C16 Fraction minus Naphthalene	-----	50	mg/kg	<50	3333	3333	<50
5F2M							
EP0Z0: BTEXN							
Benzene	71-43-2	0.2	mg/kg	<0.2	3333	3333	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	3333	3333	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	3333	3333	<0.5
meta3& para3Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	3333	3333	<0.5
ortho3Xylene	95-47-6	0.5	mg/kg	<0.5	3333	3333	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	3333	3333	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	3333	3333	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	3333	3333	<1
EP07- 5S1° M8: Phenolic Compound Surrogates							
Phenol3I6	13127-88-3	0.5	%	3333	3333	3333	- (.0
23Chlorophenol3D(	93951-73-6	0.5	%	3333	3333	3333	-).6
2(. 63Tribromophenol	118-79-6	0.5	%	3333	3333	3333	) Z.4
EP07- 5S1° M7: PAH Surrogates							
23Fluorobiphenyl	321-60-8	0.5	%	3333	3333	3333	-2.0
Anthracene3I10	1719-06-8	0.5	%	3333	3333	3333	-1.1
(3Terphenyl3I1(	1718-51-0	0.5	%	3333	3333	3333	-Z.0



Analytical Results

Sub-Matrix: SOIL		Sample ID		Sampling date / time		BH143		BH143		BH143		BH2031		BH203	
Matrix: SOILM						13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	EB22106773(2		EB22106773((		EB22106773(-		EB22106773(Z		EB22106773- 0			
				Result		Result		Result		Result					
EA0- - : ° oisture Content Dried @ 10-31 109CM															
° oisture Content	----	0.1	%	3333		3333		3333		) Z		3333		3333	
° oisture Content	----	1.0	%	7.(		Z.1		Z(		3333		3333		Z-	
E8 00- 5ED04) M: Total ° etals by ICP3AES															
Arsenic	7440-38-2	5	mg/kg	17		<5		6		3333		3333		11	
Cadmium	7440-43-9	1	mg/kg	<1		<1		<1		3333		3333		<1	
Chromium	7440-47-3	2	mg/kg	12		12		10		3333		3333		4	
Copper	7440-50-8	5	mg/kg	) 1		10		Z		3333		3333		12	
Lead	7439-92-1	5	mg/kg	- 6		12		12		3333		3333		26	
Nickel	7440-02-0	2	mg/kg	1)		10		Z		3333		3333		(	
Ginc	7440-66-6	5	mg/kg	74		)-		) 2		3333		3333		- 4	
E8 0) - T: Total Recoverable ° ercury by FI° S															
° ercury	7439-97-6	0.1	mg/kg	0.1		<0.1		<0.1		3333		3333		<0.1	
EP06ZA: Organochlorine Pesticides 50CM															
alpha3BHC	319-84-6	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
Hexachlorobenzene 3HCBM	118-74-1	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
beta3BHC	319-85-7	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
gamma3BHC	58-89-9	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
delta3BHC	319-86-8	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
Heptachlor	76-44-8	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
Aldrin	309-00-2	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
^ Total Chlordane 5umM	----	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
trans3Chlordane	5103-74-2	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
alpha3Endosulfan	959-98-8	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
cis3Chlordane	5103-71-9	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
Dieldrin	60-57-1	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
(.1`3DDE	72-55-9	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
Endrin	72-20-8	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
beta3Endosulfan	33213-65-9	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
^ Endosulfan 5umM	115-29-7	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
(.1`3DDD	72-54-8	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
Endrin aldehyde	7421-93-4	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	3333		3333		3333		<0.05		3333		3333	
(.1`3DDT	50-29-3	0.2	mg/kg	3333		3333		3333		<0.2		3333		3333	



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH143	BH143	BH143	BH2031	BH203
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result
EP06ZA: Organochlorine Pesticides 50CMContinued								
Endrin ketone	53494-70-5	0.05		mg/kg	333	333	<0.05	333
° ethoxychlor	72-43-5	0.2		mg/kg	333	333	<0.2	333
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05		mg/kg	333	333	<0.05	333
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05		mg/kg	333	333	<0.05	333
	0-2							
EP07- 5S: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5		mg/kg	333	<0.5	333	<0.5
Acenaphthylene	208-96-8	0.5		mg/kg	333	<0.5	333	<0.5
Acenaphthene	83-32-9	0.5		mg/kg	333	<0.5	333	<0.5
Fluorene	86-73-7	0.5		mg/kg	333	<0.5	333	<0.5
Phenanthrene	85-01-8	0.5		mg/kg	333	<0.5	333	<0.5
Anthracene	120-12-7	0.5		mg/kg	333	<0.5	333	<0.5
Fluoranthene	206-44-0	0.5		mg/kg	333	<0.5	333	<0.5
Pyrene	129-00-0	0.5		mg/kg	333	<0.5	333	<0.5
Benz[a]anthracene	56-55-3	0.5		mg/kg	333	<0.5	333	<0.5
Chrysene	218-01-9	0.5		mg/kg	333	<0.5	333	<0.5
Benzof[1]fluoranthene	205-99-2	0.5		mg/kg	333	<0.5	333	<0.5
Benzok[1]fluoranthene	207-08-9	0.5		mg/kg	333	<0.5	333	<0.5
Benzofluorene	50-32-8	0.5		mg/kg	333	<0.5	333	<0.5
Indeno[1,2,3-cd]pyrene	193-39-5	0.5		mg/kg	333	<0.5	333	<0.5
Dibenz[ah]anthracene	53-70-3	0.5		mg/kg	333	<0.5	333	<0.5
Benzofluoranthene	191-24-2	0.5		mg/kg	333	<0.5	333	<0.5
^ Sum of polycyclic aromatic hydrocarbons								
^ Benzofluorene TEQ zeroM								
^ Benzofluorene TEQ half LORM								
^ Benzofluorene TEQ full LORM								
EP0Z0/071: Total Petroleum Hydrocarbons								
C6 3C4 Fraction	----	10		mg/kg	333	<10	333	<10
C10 3C1(Fraction	----	50		mg/kg	333	<50	333	<50
C1- 3C2Z Fraction	----	100		mg/kg	333	<100	333	<100
C24 3C) 6 Fraction	----	100		mg/kg	333	120	333	<100
^ C10 3C) 6 Fraction SumM	----	50		mg/kg	333	120	333	<50
EP0Z0/071: Total Recoverable Hydrocarbons 3NEP° 201) Fractions								
C6 3C10 Fraction	C6_C10	10		mg/kg	333	<10	333	<10



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH143	BH143	BH143B	BH2031	BH203
Compound	CAS Number	LOR	Sampling date / time	BH143	BH143	BH143B	BH2031	BH203
		Unit		Result	Result	Result	Result	Result
EP0Z0/071: Total Recoverable Hydrocarbons 3NEP° 201) Fractions 3Continued								
^ C6 3C10 Fraction minus BTEX	C6_C10-BTEX	10	mg/kg	3333	<10	3333	3333	<10
5F1M								
>C10 3C16 Fraction		50	mg/kg	3333	<50	3333	3333	<50
>C16 3C) (Fraction		100	mg/kg	3333	120	3333	3333	<100
>C) (3C(0 Fraction		100	mg/kg	3333	170	3333	3333	<100
^ >C10 3C(0 Fraction SumM		50	mg/kg	3333	240	3333	3333	<50
^ >C10 3C16 Fraction minus Naphthalene		50	mg/kg	3333	<50	3333	3333	<50
5F2M								
EP0Z0: BTEXN								
Benzene	71-43-2	0.2	mg/kg	3333	<0.2	3333	3333	<0.2
Toluene	108-88-3	0.5	mg/kg	3333	<0.5	3333	3333	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	3333	<0.5	3333	3333	<0.5
meta3& para3Xylene	108-38-3 106-42-3	0.5	mg/kg	3333	<0.5	3333	3333	<0.5
ortho3Xylene	95-47-6	0.5	mg/kg	3333	<0.5	3333	3333	<0.5
^ Sum of BTEX		0.2	mg/kg	3333	<0.2	3333	3333	<0.2
^ Total Xylenes		0.5	mg/kg	3333	<0.5	3333	3333	<0.5
Naphthalene	91-20-3	1	mg/kg	3333	<1	3333	3333	<1
EP2) 1A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid	375-73-5	0.0002	mg/kg	3333	3333	3333	<0.0002	3333
5PFBSM								
Perfluoropentane sulfonic acid	2706-91-4	0.0002	mg/kg	3333	3333	3333	<0.0002	3333
5PFPeSM								
Perfluorohexane sulfonic acid	355-46-4	0.0002	mg/kg	3333	3333	3333	<0.0002	3333
5PFHxSM								
Perfluoroheptane sulfonic acid	375-92-8	0.0002	mg/kg	3333	3333	3333	<0.0002	3333
5PFHpSM								
Perfluorooctane sulfonic acid	1763-23-1	0.0002	mg/kg	3333	3333	3333	<0.0002	3333
5PFOSM								
Perfluorodecane sulfonic acid	335-77-3	0.0002	mg/kg	3333	3333	3333	<0.0002	3333
5PFDSM								
EP2) 1B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid 5PFBA	375-22-4	0.001	mg/kg	3333	3333	3333	<0.001	3333
Perfluoropentanoic acid 5PFPeA	2706-90-3	0.0002	mg/kg	3333	3333	3333	<0.0002	3333
Perfluorohexanoic acid 5PFHxA	307-24-4	0.0002	mg/kg	3333	3333	3333	<0.0002	3333
Perfluoroheptanoic acid 5PFHpA	375-85-9	0.0002	mg/kg	3333	3333	3333	<0.0002	3333

Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH143		BH143		BH143		BH203	
Compound	CAS Number	LOR	Sampling date / time	Unit	BH143		BH143		BH203		
					Result	Result	Result	Result	Result	Result	
					Result	Result	Result	Result			
EP2) 1B: Perfluoroalkyl Carboxylic Acids 3Continued											
Perfluorooctanoic acid 5FOAM	335-67-1	0.0002		mg/kg	3333		3333		<0.0002		3333
Perfluorononanoic acid 5FNFAM	375-95-1	0.0002		mg/kg	3333		3333		<0.0002		3333
Perfluorodecanoic acid 5FDFAM	335-76-2	0.0002		mg/kg	3333		3333		<0.0002		3333
Perfluoroundecanoic acid 5FUDAM	2058-94-8	0.0002		mg/kg	3333		3333		<0.0002		3333
Perfluorododecanoic acid 5FDODAM	307-55-1	0.0002		mg/kg	3333		3333		<0.0002		3333
Perfluorotridecanoic acid 5FTRDAM	72629-94-8	0.0002		mg/kg	3333		3333		<0.0002		3333
Perfluorotetradecanoic acid 5FTeDAM	376-06-7	0.0005		mg/kg	3333		3333		<0.0005		3333
EP2) 1C: Perfluoroalkyl Sulfonamides											
Perfluorooctane sulfonamide 5FOSAM	754-91-6	0.0002		mg/kg	3333		3333		<0.0002		3333
N3 ethyl perfluorooctane sulfonamide 5 eFOSAM	31506-32-8	0.0005		mg/kg	3333		3333		<0.0005		3333
N3ethyl perfluorooctane sulfonamide 5EtFOSAM	4151-50-2	0.0005		mg/kg	3333		3333		<0.0005		3333
N3 ethyl perfluorooctane sulfonamidoethanol 5 eFOSEM	24448-09-7	0.0005		mg/kg	3333		3333		<0.0005		3333
N3ethyl perfluorooctane sulfonamidoethanol 5EtFOSEM	1691-99-2	0.0005		mg/kg	3333		3333		<0.0005		3333
N3 ethyl perfluorooctane sulfonamidoacetic acid 5 eFOSAAM	2355-31-9	0.0002		mg/kg	3333		3333		<0.0002		3333
N3ethyl perfluorooctane sulfonamidoacetic acid 5EtFOSAAM	2991-50-6	0.0002		mg/kg	3333		3333		<0.0002		3333
EP2) 1D: 5n:2MFluorotelomer Sulfonic Acids											
(:2 Fluorotelomer sulfonic acid 5 :2 FTSM	757124-72-4	0.0005		mg/kg	3333		3333		<0.0005		3333
6:2 Fluorotelomer sulfonic acid 56:2 FTSM	27619-97-2	0.0005		mg/kg	3333		3333		<0.0005		3333
Z:2 Fluorotelomer sulfonic acid 5Z:2 FTSM	39108-34-4	0.0005		mg/kg	3333		3333		<0.0005		3333



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH143	BH143	BH143	BH2031	BH203
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result
EP2) 1D: 5n:2MFluorotelomer Sulfonic Acids 3Continued								
10:2 Fluorotelomer sulfonic acid	120226-60-0	0.0005		mg/kg	3333		<0.0005	3333
510:2 FTSM								
EP2) 1P: PFAS Sums								
Sum of PFAS	----	0.0002		mg/kg	3333		<0.0002	3333
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002		mg/kg	3333		<0.0002	3333
Sum of PFAS SWA DER ListM	----	0.0002		mg/kg	3333		<0.0002	3333
EP06ZS: Organochlorine Pesticide Surrogate								
DibromoDDE	21655-73-2	0.05		%	3333		10Z	3333
EP06ZT: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05		%	3333		1((	3333
EP07- 5SI° 1S: Phenolic Compound Surrogates								
Phenol346	13127-88-3	0.5		%	3333	104	3333	42.(
23Chlorophenol3D(	93951-73-6	0.5		%	3333	102	3333	Z2.0
2.(.63Tribromophenol	118-79-6	0.5		%	3333	Z7.4	3333	Z1.0
EP07- 5SI° M: PAH Surrogates								
23Fluorobiphenyl	321-60-8	0.5		%	3333	4- 7	3333	66.0
Anthracene3410	1719-06-8	0.5		%	3333	110	3333	ZZ.)
(3Terphenyl341(	1718-51-0	0.5		%	3333	Z- Z	3333	7- Z
EP0Z0S: TPH5/MBTEX Surrogates								
1.23Dichloroethane3D(	17060-07-0	0.2		%	3333	40.6	3333	72.Z
Toluene3DZ	2037-26-5	0.2		%	3333	Z2.6	3333	71.1
(3Bromofluorobenzene	460-00-4	0.2		%	3333	10-	3333	7(. 7
EP2) 1S: PFAS Surrogate								
1) C(3PFOS	-----	0.0002		%	3333	3333	10)	3333
1) CZ3FOA	-----	0.0002		%	3333	3333	10(	3333

Sub-Matrix: SOIL
5Matrix: SOILM

Sub-Matrix: SOIL Matrix: SOILM		Sample ID	
		Sampling date / time	
Compound	CAS Number	LOR	Unit
	Result		
EA0- - : ° oisture Content EDried @ 10- 3f 10SCM			
° oisture Content			
---- 1.0 %			
E8 00- 5ED04) M: Total ° etals by ICPAES			
Arsenic	7440-38-2	5	mg/kg
Cadmium	7440-43-9	1	mg/kg
Chromium	7440-47-3	2	mg/kg
Copper	7440-50-8	5	mg/kg
Lead	7439-92-1	5	mg/kg
Nickel	7440-02-0	2	mg/kg
Ginc	7440-66-6	5	mg/kg
E8 0) - T: Total Recoverable ° ercury by FI° S			
° ercury			
7439-97-6 0.1 mg/kg			
EP07- 5S° lB: Polynuclear Aromatic Hydrocarbons			
Naphthalene	91-20-3	0.5	mg/kg
Acenaphthylene	208-96-8	0.5	mg/kg
Acenaphthene	83-32-9	0.5	mg/kg
Fluorene	86-73-7	0.5	mg/kg
Phenanthrene	85-01-8	0.5	mg/kg
Anthracene	120-12-7	0.5	mg/kg
Fluoranthene	206-44-0	0.5	mg/kg
Pyrene	129-00-0	0.5	mg/kg
Benz[a]Mnthracene	56-55-3	0.5	mg/kg
Chrysene	218-01-9	0.5	mg/kg
Benzo[b,j]luoranthene	205-99-2	0.5	mg/kg
Benzo[k]luoranthene	207-08-9	0.5	mg/kg
Benzo[ghi]perylene	50-32-8	0.5	mg/kg
Indeno[1,2,3-cd]pyrene	193-39-5	0.5	mg/kg
Dibenz[ah]Mnthracene	53-70-3	0.5	mg/kg
Benzo[ghi]perylene	191-24-2	0.5	mg/kg
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg
^ Benzo[ghi]perylene TEQ zeroM	----	0.5	mg/kg
^ Benzo[ghi]perylene TEQ half LORM	----	0.5	mg/kg
^ Benzo[ghi]perylene TEQ full LORM	----	0.5	mg/kg
EP07- 5S° lB: Phenolic Compound Surrogates			
Phenol36	13127-88-3	0.5	%



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH203		BH2131		BH2132		BH2133	
		Sampling date / time		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	EB221067730-1		EB221067730-2		EB221067730-6		EB221067730-7	
				Result		Result		Result		Result	
EP07-5SI° 18: Phenolic Compound Surrogates 3Continued											
2,3Chlorophenol3D(	93951-73-6	0.5	%	120		3333		3333		117	3333
2,4,6Tri bromophenol	118-79-6	0.5	%	12)		3333		3333		10(	3333
EP07-5SI° 17: PAH Surrogates											
2,3Fluorobiphenyl	321-60-8	0.5	%	4(.1		3333		3333		42.7	3333
Anthracene3I10	1719-06-8	0.5	%	104		3333		3333		102	3333
(3Terphenyl3I1(	1718-51-0	0.5	%	10)		3333		3333		101	3333



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH2135	BH2231	BH2232	BH2233	BH2234
Compound	CAS Number	LOR	Sampling date / time	Unit	13-Apr-2022 00:00 EB22106773061	13-Apr-2022 00:00 EB22106773061	13-Apr-2022 00:00 EB22106773066	13-Apr-2022 00:00 EB22106773067
EA0-- : ° oisture Content		1.0	%	3333	2.)	3333	3333	3333
EA0-- : ° oisture Content		0.1	%	3333	3333	7.)	3333	3333
EA0-- : ° oisture Content		1.0	%	3333	3333	3333	3333	3333
E8 00-5ED04) M: Total ° etals by ICP3AES		5	mg/kg	22	12	3333	3333	3333
Arsenic	7440-38-2	5	mg/kg	22	12	3333	3333	3333
Cadmium	7440-43-9	1	mg/kg	<1	<1	3333	3333	3333
Chromium	7440-47-3	2	mg/kg	4	4	3333	3333	3333
Copper	7440-50-8	5	mg/kg	12	12	3333	3333	3333
Lead	7439-92-1	5	mg/kg	2	2	3333	3333	3333
Nickel	7440-02-0	2	mg/kg	<2	)	3333	3333	3333
Ginc	7440-66-6	5	mg/kg	<5	<5	3333	3333	3333
E8 0) - T: Total Recoverable ° ercury by FI° S		0.1	mg/kg	<0.1	<0.1	3333	3333	3333
EP07-5SI° NB: Polynuclear Aromatic Hydrocarbons		0.5	mg/kg	3333	3333	3333	3333	3333
Naphthalene	91-20-3	0.5	mg/kg	3333	3333	3333	3333	3333
Acenaphthylene	208-96-8	0.5	mg/kg	3333	3333	3333	3333	3333
Acenaphthene	83-32-9	0.5	mg/kg	3333	3333	3333	3333	3333
Fluorene	86-73-7	0.5	mg/kg	3333	3333	3333	3333	3333
Phenanthrene	85-01-8	0.5	mg/kg	3333	3333	3333	3333	3333
Anthracene	120-12-7	0.5	mg/kg	3333	3333	3333	3333	3333
Fluoranthene	206-44-0	0.5	mg/kg	3333	3333	3333	3333	3333
Pyrene	129-00-0	0.5	mg/kg	3333	3333	3333	3333	3333
Benz[a]Mntracene	56-55-3	0.5	mg/kg	3333	3333	3333	3333	3333
Chrysene	218-01-9	0.5	mg/kg	3333	3333	3333	3333	3333
Benzo[b]fluoranthene	205-99-2	0.5	mg/kg	3333	3333	3333	3333	3333
Benzo[k]fluoranthene	207-08-9	0.5	mg/kg	3333	3333	3333	3333	3333
Benzo[a]pyrene	50-32-8	0.5	mg/kg	3333	3333	3333	3333	3333
Indeno[1,2,3-cd]pyrene	193-39-5	0.5	mg/kg	3333	3333	3333	3333	3333
Dibenz[a,h]Mntracene	53-70-3	0.5	mg/kg	3333	3333	3333	3333	3333
Benzo[g,h,i]perylene	191-24-2	0.5	mg/kg	3333	3333	3333	3333	3333
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	3333	3333	3333	3333	3333
^ Benzo[a]pyrene TEQ zeroM	----	0.5	mg/kg	3333	3333	3333	3333	3333
^ Benzo[a]pyrene TEQ half LORM	----	0.5	mg/kg	3333	3333	3333	3333	3333



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH2135		BH2231		BH2232		BH2233		BH2234	
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result
EP07-5SI [®] B: Polynuclear Aromatic Hydrocarbons 3 Continued													
^ Benzo[a]pyrene TEQ 5LORM	---	0.5	mg/kg		333	333	333	333	333	333	333	333	1.2
EP0Z0/071: Total Petroleum Hydrocarbons													
C6 3C4 Fraction	---	10	mg/kg		333	333	333	<10	333	333	333	333	333
C10 3C1(Fraction	---	50	mg/kg		333	333	333	<50	333	333	333	333	333
C1- 3C22 Fraction	---	100	mg/kg		333	333	333	<100	333	333	333	333	333
C24 3C) 6 Fraction	---	100	mg/kg		333	333	333	<100	333	333	333	333	333
^ C10 3C) 6 Fraction 5umM	---	50	mg/kg		333	333	333	<50	333	333	333	333	333
EP0Z0/071: Total Recoverable Hydrocarbons 3NEP [®] 201) Fractions													
C6 3C10 Fraction	C6_C10	10	mg/kg		333	333	333	<10	333	333	333	333	333
^ C6 3C10 Fraction minus BTEX 5F1M	C6_C10-BTEX	10	mg/kg		333	333	333	<10	333	333	333	333	333
>C10 3C16 Fraction	---	50	mg/kg		333	333	333	<50	333	333	333	333	333
>C16 3C) (Fraction	---	100	mg/kg		333	333	333	<100	333	333	333	333	333
>C) (3C) 0 Fraction	---	100	mg/kg		333	333	333	<100	333	333	333	333	333
^ >C10 3C(0 Fraction 5umM	---	50	mg/kg		333	333	333	<50	333	333	333	333	333
^ >C10 3C16 Fraction minus Naphthalene 5F2M	---	50	mg/kg		333	333	333	<50	333	333	333	333	333
EP0Z0: BTEXN													
Benzene	71-43-2	0.2	mg/kg		333	333	333	<0.2	333	333	333	333	333
Toluene	108-88-3	0.5	mg/kg		333	333	333	<0.5	333	333	333	333	333
Ethylbenzene	100-41-4	0.5	mg/kg		333	333	333	<0.5	333	333	333	333	333
meta3& para3Xylene	108-38-3 106-42-3	0.5	mg/kg		333	333	333	<0.5	333	333	333	333	333
ortho3Xylene	95-47-6	0.5	mg/kg		333	333	333	<0.5	333	333	333	333	333
^ Sum of BTEX	---	0.2	mg/kg		333	333	333	<0.2	333	333	333	333	333
^ Total Xylenes	---	0.5	mg/kg		333	333	333	<0.5	333	333	333	333	333
Naphthalene	91-20-3	1	mg/kg		333	333	333	<1	333	333	333	333	333
EP2) 1A: Perfluoroalkyl Sulfonic Acids													
Perfluorobutane sulfonic acid 5PFBSM	375-73-5	0.0002	mg/kg		333	333	333	333	<0.0002	333	333	333	333
Perfluoropentane sulfonic acid 5PFPeSM	2706-91-4	0.0002	mg/kg		333	333	333	333	<0.0002	333	333	333	333
Perfluorohexane sulfonic acid 5PFHxSM	355-46-4	0.0002	mg/kg		333	333	333	333	<0.0002	333	333	333	333
Perfluoroheptane sulfonic acid 5PFHpSM	375-92-8	0.0002	mg/kg		333	333	333	333	<0.0002	333	333	333	333



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH2136		BH2231		BH2232		BH2233		BH2234	
Compound		CAS Number	LOR	Sampling date / time	Unit	13-Apr-2022 00:00 EB22106773061		13-Apr-2022 00:00 EB22106773066		13-Apr-2022 00:00 EB22106773067		13-Apr-2022 00:00 EB22106773067	
						Result		Result		Result		Result	
EP2) 1A: Perfluoroalkyl Sulfonic Acids 3Continued													
Perfluorooctane sulfonic acid PFOSM		1763-23-1	0.0002		mg/kg	3333		3333		<0.0002		3333	
Perfluorodecane sulfonic acid PFDSM		335-77-3	0.0002		mg/kg	3333		3333		<0.0002		3333	
EP2) 1B: Perfluoroalkyl Carboxylic Acids													
Perfluorobutanoic acid PFBA		375-22-4	0.001		mg/kg	3333		3333		<0.001		3333	
Perfluoropentanoic acid PFPeA		2706-90-3	0.0002		mg/kg	3333		3333		<0.0002		3333	
Perfluorohexanoic acid PFHxA		307-24-4	0.0002		mg/kg	3333		3333		<0.0002		3333	
Perfluoroheptanoic acid PFHpA		375-85-9	0.0002		mg/kg	3333		3333		<0.0002		3333	
Perfluorooctanoic acid PFOA		335-67-1	0.0002		mg/kg	3333		3333		<0.0002		3333	
Perfluorononanoic acid PFNA		375-95-1	0.0002		mg/kg	3333		3333		<0.0002		3333	
Perfluorodecanoic acid PFDA		335-76-2	0.0002		mg/kg	3333		3333		<0.0002		3333	
Perfluoroundecanoic acid PFUnDAM		2058-94-8	0.0002		mg/kg	3333		3333		<0.0002		3333	
Perfluorododecanoic acid PFDoDAM		307-55-1	0.0002		mg/kg	3333		3333		<0.0002		3333	
Perfluorotridecanoic acid PFTriDAM		72629-94-8	0.0002		mg/kg	3333		3333		<0.0002		3333	
Perfluorotetradecanoic acid PFTeDAM		376-06-7	0.0005		mg/kg	3333		3333		<0.0005		3333	
EP2) 1C: Perfluoroalkyl Sulfonamides													
Perfluorooctane sulfonamide FOSAM		754-91-6	0.0002		mg/kg	3333		3333		<0.0002		3333	
N ³ ethyl perfluorooctane sulfonamide F ³ eFOSAM		31506-32-8	0.0005		mg/kg	3333		3333		<0.0005		3333	
N ³ ethyl perfluorooctane sulfonamide EtFOSAM		4151-50-2	0.0005		mg/kg	3333		3333		<0.0005		3333	
N ³ ethyl perfluorooctane sulfonamidoethanol F ³ eFOSEM		24448-09-7	0.0005		mg/kg	3333		3333		<0.0005		3333	
N ³ ethyl perfluorooctane sulfonamidoethanol EtFOSEM		1691-99-2	0.0005		mg/kg	3333		3333		<0.0005		3333	
N ³ ethyl perfluorooctane sulfonamidoacetic acid F ³ eFOAAM		2355-31-9	0.0002		mg/kg	3333		3333		<0.0002		3333	



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH2135	BH2231	BH2232	BH2233	BH2234
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result
EP2) 1C: Perfluoroalkyl Sulfonamides 3Continued								
N-Ethyl perfluorooctane sulfonamidoacetic acid	2991-50-6	0.0002		mg/kg	3333	3333	<0.0002	3333
EP2) 1D: 5:2Fluorotelomer Sulfonic Acids								
(-):2 Fluorotelomer sulfonic acid	757124-72-4	0.0005		mg/kg	3333	3333	<0.0005	3333
5:2 FTSM								
6:2 Fluorotelomer sulfonic acid	27619-97-2	0.0005		mg/kg	3333	3333	<0.0005	3333
5:2 FTSM								
Z:2 Fluorotelomer sulfonic acid	39108-34-4	0.0005		mg/kg	3333	3333	<0.0005	3333
5:2 FTSM								
10:2 Fluorotelomer sulfonic acid	120226-60-0	0.0005		mg/kg	3333	3333	<0.0005	3333
50:2 FTSM								
EP2) 1P: PFAS Sums								
Sum of PFAS	----	0.0002		mg/kg	3333	3333	<0.0002	3333
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002		mg/kg	3333	3333	<0.0002	3333
Sum of PFAS 5WA DER ListM	----	0.0002		mg/kg	3333	3333	<0.0002	3333
EP07- 5SI [®] MS: Phenolic Compound Surrogates								
Phenol316	13127-88-3	0.5		%	3333	3333	3333	11)
2,3Chlorophenol310	93951-73-6	0.5		%	3333	3333	3333	11(
2,4,6-Tribromophenol	118-79-6	0.5		%	3333	3333	3333	42.2
EP07- 5SI [®] MT: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5		%	3333	3333	3333	4(. 1
Anthracene310	1719-06-8	0.5		%	3333	3333	3333	102
(3-Terphenyl)311	1718-51-0	0.5		%	3333	3333	3333	101
EP020S: TPH8/MBTEX Surrogates								
1,2,3Dichloroethane310	17060-07-0	0.2		%	3333	47.)	3333	3333
Toluene310	2037-26-5	0.2		%	3333	27.(	3333	3333
(3-Bromofluorobenzene	460-00-4	0.2		%	3333	104	3333	3333
EP2) 1S: PFAS Surrogate								
1) C(3)FOS	----	0.0002		%	3333	3333	102	3333
1) C(3)FOA	----	0.0002		%	3333	3333	112	3333

Analytical Results

Sub-Matrix: SOIL		Sample ID		BH2(31		BH2(32		BH2(33		BH2(31		BH2(32	
Matrix: SOLIM		Sampling date / time		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
EA002: pH 1:- 5SolIM													
pH Value	----	0.1	pH Unit	4.(	3333		3333		3333		3333		3333
EA010: Conductivity 5l:- M													
Electrical Conductivity @ 2- 9C	----	1	µS/cm	7-	3333		3333		3333		3333		3333
EA0-- : ° oisture Content 5Dried @ 10- 31 109CM													
° oisture Content	----	0.1	%	- .0	3333		3333		3333		3333		3333
° oisture Content	----	1.0	%	3333	- .4		27.(		3333		(.2		- .1
ED006: Exchangeable Cations on Alkaline Soils													
ø Exchangeable Calcium	----	0.2	meq/100g	) .7	3333		3333		3333		3333		3333
ø Exchangeable ° agnesium	----	0.2	meq/100g	1.(	3333		3333		3333		3333		3333
ø Exchangeable Potassium	----	0.2	meq/100g	<0.2	3333		3333		3333		3333		3333
ø Exchangeable Sodium	----	0.2	meq/100g	0.4	3333		3333		3333		3333		3333
ø Cation Exchange Capacity	----	0.2	meq/100g	6.0	3333		3333		3333		3333		3333
ø Exchangeable Sodium Percent	----	0.2	%	1(.)	3333		3333		3333		3333		3333
ø Calcium/° agnesium Ratio	----	0.2	-	2.-	3333		3333		3333		3333		3333
E8 00- 5ED04) M: Total ° etals by ICP3AES													
Arsenic	7440-38-2	5	mg/kg	3333	<5		-		<5		<5		<5
Cadmium	7440-43-9	1	mg/kg	3333	<1		<1		<1		<1		<1
Chromium	7440-47-3	2	mg/kg	3333	-		) 0		(		(		(
Copper	7440-50-8	5	mg/kg	3333	<5		) 2		<5		<5		<5
Lead	7439-92-1	5	mg/kg	3333	6		(7		6		6		7
Nickel	7440-02-0	2	mg/kg	3333	)		14		2		2		)
Ginc	7440-66-6	5	mg/kg	3333	2-		11)		22		22		2(
E8 0) - T: Total Recoverable ° ercury by FI° S													
° ercury	7439-97-6	0.1	mg/kg	3333	<0.1		0.(		<0.1		<0.1		<0.1
EK0- - : Ammonia as N													
Ammonia as N	7664-41-7	20	mg/kg	<20	3333		3333		3333		3333		3333
EK0- 48 : Nitrite plus Nitrate as N 5NOxMby Discrete Analyser													
Nitrite + Nitrate as N 5SolIM	-----	0.1	mg/kg	1.0	3333		3333		3333		3333		3333
EK0618 : Total Kjeldahl Nitrogen By Discrete Analyser													
Total Kjeldahl Nitrogen as N	-----	20	mg/kg	20	3333		3333		3333		3333		3333
EK062: Total Nitrogen as N 5TKN + NOxM													
^ Total Nitrogen as N	-----	20	mg/kg	20	3333		3333		3333		3333		3333
EP06ZA: Organochlorine Pesticides 5OCM													



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID			BH2) 31		BH2) 32		BH2) 3		BH2) 31		BH2) 32		
		Sampling date / time			13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		
Compound	CAS Number	LOR	Unit	Result		Result		Result		Result		Result		Result	
EP06ZA: Organochlorine Pesticides 50CM8Continued															
alphaBHC	319-84-6	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
Hexachlorobenzene HCBM	118-74-1	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
betaBHC	319-85-7	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
gammaBHC	58-89-9	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
deltaBHC	319-86-8	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
Heptachlor	76-44-8	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
Aldrin	309-00-2	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
^ Total Chlordane SumM	----	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
transChlordane	5103-74-2	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
alphaEndosulfan	959-98-8	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
cisChlordane	5103-71-9	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
Dieldrin	60-57-1	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
(. '3DDE	72-55-9	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
Endrin	72-20-8	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
betaEndosulfan	33213-65-9	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
^ Endosulfan SumM	115-29-7	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
(. '3DDD	72-54-8	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
Endrin aldehyde	7421-93-4	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
(. '3DDT	50-29-3	0.2	mg/kg	3333		<0.2		3333		<0.2		3333		3333	
Endrin ketone	53494-70-5	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
° ethoxychlor	72-43-5	0.2	mg/kg	3333		<0.2		3333		<0.2		3333		3333	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	3333		<0.05		3333		<0.05		3333		3333	
EP07- 5S1° 18: Polynuclear Aromatic Hydrocarbons															
Naphthalene	91-20-3	0.5	mg/kg	3333		<0.5		3333		<0.5		3333		3333	
Acenaphthylene	208-96-8	0.5	mg/kg	3333		<0.5		3333		<0.5		3333		3333	
Acenaphthene	83-32-9	0.5	mg/kg	3333		<0.5		3333		<0.5		3333		3333	
Fluorene	86-73-7	0.5	mg/kg	3333		<0.5		3333		<0.5		3333		3333	
Phenanthrene	85-01-8	0.5	mg/kg	3333		<0.5		3333		<0.5		3333		3333	
Anthracene	120-12-7	0.5	mg/kg	3333		<0.5		3333		<0.5		3333		3333	
Fluoranthene	206-44-0	0.5	mg/kg	3333		<0.5		3333		<0.5		3333		3333	
Pyrene	129-00-0	0.5	mg/kg	3333		<0.5		3333		<0.5		3333		3333	



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		BH2) 31		BH2) 32		BH2) 3		BH2) 31		BH2) 32	
		Sampling date / time		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00		13-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	EB22106773070		EB22106773071		EB22106773072		EB22106773074			
EP07- 5S1 [®] M8: Polynuclear Aromatic Hydrocarbons 3Continued													
Benz[a]anthracene	56-55-3	0.5	mg/kg	3333		<0.5		3333		3333		3333	
Chrysene	218-01-9	0.5	mg/kg	3333		<0.5		3333		3333		3333	
Benzofluoranthene	205-99-2	0.5	mg/kg	3333		<0.5		3333		3333		3333	
Benzofluoranthene	207-08-9	0.5	mg/kg	3333		<0.5		3333		3333		3333	
Benzofluoranthene	50-32-8	0.5	mg/kg	3333		<0.5		3333		3333		3333	
Indeno[1,2,3-cd]pyrene	193-39-5	0.5	mg/kg	3333		<0.5		3333		3333		3333	
Dibenz[ah]anthracene	53-70-3	0.5	mg/kg	3333		<0.5		3333		3333		3333	
Benzofluoranthene	191-24-2	0.5	mg/kg	3333		<0.5		3333		3333		3333	
^ Sum of polycyclic aromatic hydrocarbons	-----	0.5	mg/kg	3333		<0.5		3333		3333		3333	
^ Benzofluoranthene TEQ &eroM	-----	0.5	mg/kg	3333		<0.5		3333		3333		3333	
^ Benzofluoranthene TEQ &half LORM	-----	0.5	mg/kg	3333		0.6		3333		3333		3333	
^ Benzofluoranthene TEQ &LORM	-----	0.5	mg/kg	3333		1.2		3333		3333		3333	
EP020/071: Total Petroleum Hydrocarbons													
C6 3C4 Fraction	-----	10	mg/kg	<10		<10		3333		3333		3333	
C10 3C1(Fraction	-----	50	mg/kg	<50		<50		3333		3333		3333	
C1- 3C2Z Fraction	-----	100	mg/kg	<100		<100		3333		3333		3333	
C24 3C) 6 Fraction	-----	100	mg/kg	<100		<100		3333		3333		3333	
^ C10 3C) 6 Fraction &sumM	-----	50	mg/kg	<50		<50		3333		3333		3333	
EP020/071: Total Recoverable Hydrocarbons 3NEP [®] 201) Fractions													
C6 3C10 Fraction	C6_C10	10	mg/kg	<10		<10		3333		3333		3333	
^ C6 3C10 Fraction minus BTEX &1M	C6_C10-BTEX	10	mg/kg	<10		<10		3333		3333		3333	
>C10 3C16 Fraction	-----	50	mg/kg	<50		<50		3333		3333		3333	
>C16 3C) (Fraction	-----	100	mg/kg	<100		<100		3333		3333		3333	
>C) (3C) 0 Fraction	-----	100	mg/kg	<100		<100		3333		3333		3333	
^ >C10 3C) 0 Fraction &sumM	-----	50	mg/kg	<50		<50		3333		3333		3333	
^ >C10 3C16 Fraction minus Naphthalene &2M	-----	50	mg/kg	<50		<50		3333		3333		3333	
EP020: BTEXN													
Benzene	71-43-2	0.2	mg/kg	<0.2		<0.2		3333		3333		3333	
Toluene	108-88-3	0.5	mg/kg	<0.5		<0.5		3333		3333		3333	
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5		<0.5		3333		3333		3333	
meta3& para3ylene	108-38-3	0.5	mg/kg	<0.5		<0.5		3333		3333		3333	
ortho3ylene	95-47-6	0.5	mg/kg	<0.5		<0.5		3333		3333		3333	
^ Sum of BTEX	-----	0.2	mg/kg	<0.2		<0.2		3333		3333		3333	



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		Sampling date / time		BH2) 31		BH2) 32		BH2) 3		BH2) 31		BH2) 32	
Compound	CAS Number	LOR	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
EP0Z0: BTEXN 3 Continued															
^ Total Xylenes	----	0.5	mg/kg	<0.5				<0.5							
Naphthalene	91-20-3	1	mg/kg	<1				<1							
EP06ZS: Organochlorine Pesticide Surrogate															
DibromodDE	21655-73-2	0.05	%					4-.)						112	
EP06ZT: Organophosphorus Pesticide Surrogate															
DEF	78-48-8	0.05	%					4Z.)						1(6	
EP07- 5S) 16: Phenolic Compound Surrogates															
Phenol316	13127-88-3	0.5	%					11-						3333	
23Chlorophenol3D(	93951-73-6	0.5	%					106						3333	
2,(.63Tribromophenol	118-79-6	0.5	%					100						3333	
EP07- 5S) 17: PAH Surrogates															
23Fluorobiphenyl	321-60-8	0.5	%					46.7						3333	
Anthracene310	1719-06-8	0.5	%					116						3333	
(3Terphenyl311(	1718-51-0	0.5	%					26.(						3333	
EP0Z0S: TPH8/MBTEX Surrogates															
1,2Dichloroethane3D(	17060-07-0	0.2	%					42.(						3333	
Toluene3DZ	2037-26-5	0.2	%					Z-.(						3333	
(3Bromofluorobenzene	460-00-4	0.2	%					10-						3333	



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		Sampling date / time		BH2(3)		BH2(3)		QC01		QC0)		QC0-	
Compound	CAS Number	LOR	Unit	Result		Result		Result		Result		Result		Result	
EA0-- : ° oisture Content															
° oisture Content				----	1.0	%	11.4	Z.4	3333	3333	3333	3333	3333	3333	3333
EA0-- : ° oisture Content 5Dried @ 10- 31 109CM															
° oisture Content				----	1.0	%	3333	3333	4.Z	11.(	11.(	11.(	2.Z	2.Z	2.Z
E8 00- 5ED04) M: Total ° etals by ICP3AES															
Arsenic	7440-38-2	5	mg/kg	6	-	1(	<1	<1	<1	<5	<1	<1	<1	1Z	<1
Cadmium	7440-43-9	1	mg/kg	1-	12	6	2	2	2	2	2	2	2	6	6
Chromium	7440-47-3	2	mg/kg	22	16	Z(	10	2	2	4	4	4	4	1-	1-
Copper	7440-50-8	5	mg/kg	42	10	2	2	2	2	6	6	6	6	10	10
Lead	7439-92-1	5	mg/kg	1)	27	12	26	26	26	7	7	7	7	<2	<2
Nickel	7440-02-0	2	mg/kg	1(7	0.)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7	7
Ginc	7440-66-6	5	mg/kg	0.2	0.)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
E8 0) - T: Total Recoverable ° ercury by FI° S															
° ercury				7439-97-6	0.1	mg/kg	0.2	<10	<10	<10	<10	<10	<10	<10	<10
EP0Z0/071: Total Petroleum Hydrocarbons															
C6 3C4 Fraction				----	10	mg/kg	<10	<10	3333	3333	3333	3333	3333	3333	3333
C10 3C1(Fraction				----	50	mg/kg	<50	<50	3333	3333	3333	3333	3333	3333	3333
C1- 3C2Z Fraction				----	100	mg/kg	<100	<100	3333	3333	3333	3333	3333	3333	3333
C24 3C) 6 Fraction				----	100	mg/kg	<100	<100	3333	3333	3333	3333	3333	3333	3333
^ C10 3C) 6 Fraction 5umM				----	50	mg/kg	<50	<50	3333	3333	3333	3333	3333	3333	3333
EP0Z0/071: Total Recoverable Hydrocarbons 3NEP° 201) Fractions															
C6 3C10 Fraction				C6_C10	10	mg/kg	<10	<10	3333	3333	3333	3333	3333	3333	3333
^ C6 3C10 Fraction minus BTEX				C6_C10-BTEX	10	mg/kg	<10	<10	3333	3333	3333	3333	3333	3333	3333
5F-1M															
>C10 3C16 Fraction				----	50	mg/kg	<50	<50	3333	3333	3333	3333	3333	3333	3333
>C16 3C) (Fraction				----	100	mg/kg	<100	<100	3333	3333	3333	3333	3333	3333	3333
>C) (3C(0 Fraction				----	100	mg/kg	<100	<100	3333	3333	3333	3333	3333	3333	3333
^ >C10 3C(0 Fraction 5umM				----	50	mg/kg	<50	<50	3333	3333	3333	3333	3333	3333	3333
^ >C10 3C16 Fraction minus Naphthalene				----	50	mg/kg	<50	<50	3333	3333	3333	3333	3333	3333	3333
5F2M															
EP0Z0: BTEXN															
Benzene				71-43-2	0.2	mg/kg	<0.2	<0.2	3333	3333	3333	3333	3333	3333	3333
Toluene				108-88-3	0.5	mg/kg	<0.5	<0.5	3333	3333	3333	3333	3333	3333	3333
Ethylbenzene				100-41-4	0.5	mg/kg	<0.5	<0.5	3333	3333	3333	3333	3333	3333	3333
meta3& para3Xylene				108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	3333	3333	3333	3333	3333	3333	3333



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		Sampling date / time		BH2(3)		BH2(3)		QC01		QC0)		QC0-	
Compound	CAS Number	LOR	Unit	Sampling date / time		Result		Result		Result		Result		Result	
EP0Z0: BTEXN 3 Continued															
orthoXylene	95-47-6	0.5	mg/kg			<0.5		<0.5		3333		3333		3333	
^ Sum of BTEX	----	0.2	mg/kg			<0.2		<0.2		3333		3333		3333	
^ Total Xylenes	----	0.5	mg/kg			<0.5		<0.5		3333		3333		3333	
Naphthalene	91-20-3	1	mg/kg			<1		<1		3333		3333		3333	
EP0Z0S: TPH5/MBTEX Surrogates															
1,2Dichloroethane3D(	17060-07-0	0.2	%			Z) .2		Z4.-		3333		3333		3333	
Toluene3DZ	2037-26-5	0.2	%			Z) .2		40.1		3333		3333		3333	
(3Bromofluorobenzene	460-00-4	0.2	%			4) .6		44.0		3333		3333		3333	



Analytical Results

Sub-Matrix: SOIL Matrix: SOILM		Sample ID		Sampling date / time		Trip Spike 7		Trip Blank 0) 2Z04		ALS Control Spike		3333		3333	
Compound	CAS Number	LOR	Unit	Result		Result		Result		Result		33333333		33333333	
EP0Z0/071: Total Petroleum Hydrocarbons															
C6 3C4 Fraction		----	10	mg/kg	- 7	<10				--		3333		3333	
EP0Z0/071: Total Recoverable Hydrocarbons 3NEP° 201) Fractions															
C6 3C10 Fraction		C6_C10	10	mg/kg	6)	<10				62		3333		3333	
^ C6 3C10 Fraction minus BTEX 5F1M		C6_C10-BTEX	10	mg/kg	) Z	<10				) 7		3333		3333	
EP0Z0: BTEXN															
Benzene		71-43-2	0.2	mg/kg	0.4	<0.2				0.4		3333		3333	
Toluene		108-88-3	0.5	mg/kg	4.7	<0.5				4.6		3333		3333	
Ethylbenzene		100-41-4	0.5	mg/kg	2.0	<0.5				2.0		3333		3333	
meta3& para3Xylene		108-38-3 106-42-3	0.5	mg/kg	4.0	<0.5				4.0		3333		3333	
ortho3Xylene		95-47-6	0.5	mg/kg	) -(	<0.5				) -(		3333		3333	
^ Sum of BTEX		----	0.2	mg/kg	2-.0	<0.2				2(.4		3333		3333	
^ Total Xylenes		----	0.5	mg/kg	12.(	<0.5				12.(		3333		3333	
Naphthalene		91-20-3	1	mg/kg	<1	<1				<1		3333		3333	
EP0Z0S: TPH5/MBTEX Surrogates															
1,2Dichloroethane3D(		17060-07-0	0.2	%	Z4.-	Z4.6				Z2.2		3333		3333	
Toluene3DZ		2037-26-5	0.2	%	41.4	Z6.6				40.0		3333		3333	
(3Bromofluorobenzene		460-00-4	0.2	%	4).Z	44.1				4).0		3333		3333	



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP06ZS: Organochlorine Pesticide Surrogate			
DibromodDE	21655-73-2	10	138
EP06ZT: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	23	134
EP07- 5S1 ¹ 1S: Phenolic Compound Surrogates			
Phenol316	13127-88-3	35	154
23Chlorophenol3D	93951-73-6	42	153
2,4,63Tribromophenol	118-79-6	26	157
EP07- 5S1 ¹ 1T: PAH Surrogates			
23Fluorobiphenyl	321-60-8	34	156
Anthracene3110	1719-06-8	37	153
(3Terphenyl311	1718-51-0	42	172
EP0Z0S: TPH9/MBTEX Surrogates			
1,23Dichloroethane3D	17060-07-0	53	134
Toluene3Z	2037-26-5	60	131
(3Bromofluorobenzene	460-00-4	59	127
EP2) 1S: PFAS Surrogate			
1) C (3PFOS	-----	76	136
1) CZ3PFOA	-----	78	131



Environmental

QUALITY CONTROL REPORT

Work Order : **EB2210677**

Page : 1 of 27

Client : **BUTLER PARTNERS PTY LTD**
Contact : **MS SUZANNE WALKER**
Address : **PO BOX 2267**
FORTITUDE VALLEY BC QLD, AUSTRALIA 4006
Telephone : **+61 07 3852 3800**
Project : **018-150M**
Order number : **BP202052**
C-O-C number : **1**
Sampler : **RICHARD PEARCE**
Site : **89 Macarthur Ave, Hamilton**
Quote number : **EN/222 (Planned event Tables)**
No. of samples received : **91**
No. of samples analysed : **48**

Laboratory : **Environmental Division Brisbane**
Contact : **Kimberly Hilton-Barber**
Address : **2 Byth Street Stafford QLD Australia 4053**
Telephone : **+61-7-3243 7222**
Date Samples Received : **14-Apr-2022**
Date Analysis Commenced : **20-Apr-2022**
Issue Date : **03-May-2022**



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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	Position	Accreditation Category
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Mark Hallas	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Mark Hallas	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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 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 standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

= Indicates failed QC

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: SOIL									
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4293014)									
EB2210667-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	8	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
		EB2210667-047	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1
EG005T: Chromium	7440-47-3			2	mg/kg	3	3	0.0	No Limit
EG005T: Nickel	7440-02-0			2	mg/kg	<2	<2	0.0	No Limit
EG005T: Arsenic	7440-38-2			5	mg/kg	<5	<5	0.0	No Limit
EG005T: Copper	7440-50-8			5	mg/kg	<5	<5	0.0	No Limit
EG005T: Lead	7439-92-1			5	mg/kg	<5	<5	0.0	No Limit
EG005T: Zinc	7440-66-6			5	mg/kg	<5	<5	0.0	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4293032)									
EB2210677-044	BH19-5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	13	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	# 21	73.8	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	12	82.6	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	10	44	126	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	12	12	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	35	41	15.8	No Limit
		EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4294868)							
EB2210677-003	BH14-2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit



Sub-Matrix: SOIL			Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4294868) - continued									
EB2210677-003	BH14-2	EG005T: Chromium	7440-47-3	2	mg/kg	46	# 58	23.2	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	27	39	38.5	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	9	54.1	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	39	47	17.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	16	20	25.0	No Limit
EB2210677-042	BH19-3	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	10	16.5	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	13	8	52.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	17	24	36.9	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	31	24	24.9	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	56	50	10.8	0% - 50%
EG005T: Zinc	7440-66-6	5	mg/kg	79	73	7.9	0% - 50%		
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4294870)									
EB2210677-067	BH22-4	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	7	14.8	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	7	7	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	13	12	0.0	No Limit		
EA002: pH 1:5 (Solis) (QC Lot: 4293041)									
EB2210677-070	BH23-1	EA002: pH Value	---	0.1	pH Unit	9.4	9.5	1.8	0% - 20%
EA010: Conductivity (1:5) (QC Lot: 4293040)									
EB2210677-070	BH23-1	EA010: Electrical Conductivity @ 25°C	---	1	µS/cm	75	83	9.4	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4293030)									
EB2210667-001	Anonymous	EA055: Moisture Content	---	0.1	%	9.4	8.7	7.0	No Limit
EB2210667-047	Anonymous	EA055: Moisture Content	---	0.1	%	6.2	6.3	2.2	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4293044)									
EB2210677-044	BH19-5	EA055: Moisture Content	---	0.1	%	8.1	8.3	2.5	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4293558)									
EB2210552-002	Anonymous	EA055: Moisture Content	---	0.1	%	5.1	5.0	0.0	0% - 20%
EB2210719-004	Anonymous	EA055: Moisture Content	---	0.1	%	11.8	12.3	4.0	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4294842)									
EB2210342-001	Anonymous	EA055: Moisture Content	---	0.1	%	16.3	15.1	7.8	0% - 50%
EB2210342-011	Anonymous	EA055: Moisture Content	---	0.1	%	13.6	12.7	6.4	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4294874)									
EB2210677-002	BH14-1	EA055: Moisture Content	---	0.1	%	3.0	3.0	0.0	0% - 20%
EB2210677-042	BH19-3	EA055: Moisture Content	---	0.1	%	7.4	7.4	0.0	No Limit



Sub-Matrix: SOIL

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4294875)										
EB2210677-073	BH23-4	EA055: Moisture Content	----	0.1	%	27.4	28.3	3.3	0% - 20%	
ED006: Exchangeable Cations on Alkaline Soils (QC Lot: 4299006)										
EB2210045-002	Anonymous	ED006: Exchangeable Calcium	----	0.2	meq/100g	0.5	0.5	0.0	No Limit	
		ED006: Exchangeable Magnesium	----	0.2	meq/100g	0.7	0.7	0.0	No Limit	
		ED006: Exchangeable Potassium	----	0.2	meq/100g	1.0	1.0	0.0	No Limit	
		ED006: Exchangeable Sodium	----	0.2	meq/100g	0.6	0.6	0.0	No Limit	
		ED006: Cation Exchange Capacity	----	0.2	meq/100g	2.7	2.7	0.0	0% - 50%	
EB2210284-046	Anonymous	ED006: Exchangeable Calcium	----	0.2	meq/100g	9.1	9.2	0.0	0% - 20%	
		ED006: Exchangeable Magnesium	----	0.2	meq/100g	8.2	8.2	0.0	0% - 20%	
		ED006: Exchangeable Potassium	----	0.2	meq/100g	<0.2	<0.2	0.0	No Limit	
		ED006: Exchangeable Sodium	----	0.2	meq/100g	8.4	8.5	0.0	0% - 20%	
		ED006: Cation Exchange Capacity	----	0.2	meq/100g	25.7	25.8	0.4	0% - 20%	
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4293013)										
EB2210667-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit	
EB2210667-047	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit	
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4293033)										
EB2210677-044	BH19-5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit	
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4294869)										
EB2210677-003	BH14-2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit	
EB2210677-042	BH19-3	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	0.0	No Limit	
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4294871)										
EB2210677-067	BH22-4	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit	
EK055: Ammonia as N (QC Lot: 4299833)										
EB2210891-001	Anonymous	EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	<20	0.0	No Limit	
EB2210984-004	Anonymous	EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	<20	0.0	No Limit	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4293042)										
EB2210677-070	BH23-1	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	1.0	1.0	0.0	0% - 50%	
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4296077)										
EB2207145-006	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	560	540	4.0	0% - 20%	
EB2210442-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	280	250	13.4	0% - 50%	
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4293025)										
EB2210667-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	



Sub-Matrix: **SOIL**

Laboratory sample ID		Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report		
EB2210667-001		Anonymous	EP068A: Organochlorine Pesticides (OC) (QC Lot: 4293025) - continued				Original Result	Duplicate Result	RPD (%)
EB2210667-047	Anonymous		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Total Chlordane (sum)	---	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0
			EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0
			EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Total Chlordane (sum)	---	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0
			EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0

No Limit



Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)		
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4293025) - continued											
EB2210667-047	Anonymous	EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4293037)											
EB2210677-071	BH23-2	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP068A: Organochlorine Pesticides (OC) (QC Lot: 4294872)									
EB2210677-002	BH14-1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		



Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)		
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4294872) - continued											
EB2210677-002	BH14-1	EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4293026)											
EB2210677-004	BH14-3	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	0.8	0.8	0.0	No Limit		
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	0.9	0.9	0.0	No Limit		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	0.6	20.2	No Limit		
			205-82-3								
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	0.5	0.0	No Limit		
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL					Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4293026) - continued										
EB2210677-004	BH14-3	EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	0.6	0.7	22.1	No Limit	
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	0.6	0.0	No Limit	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4293035)										
EB2210677-044	BH19-5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(b+)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
			205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit			
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4294839)										
EB2208345-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Benzo(b+)fluoranthene	205-99-2	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
			205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.7	<0.7	0.0	No Limit	
		EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<1.4	<1.4	0.0	No Limit	
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.7	<0.7	0.0	No Limit			



Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4294839) - continued											
EB2210342-007	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	1.0	0.8	18.9	No Limit		
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	7.1	5.9	19.3	0% - 50%		
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	2.0	1.6	24.8	No Limit		
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	11.5	# 8.6	28.7	0% - 20%		
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	9.7	7.2	29.5	0% - 50%		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	5.3	3.6	38.4	0% - 50%		
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	3.7	2.6	36.8	No Limit		
		EP075(SIM): Benzo(b+i)fluoranthene	205-99-2	0.5	mg/kg	4.1	2.5	48.9	No Limit		
			205-82-3								
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	1.4	0.9	46.5	No Limit		
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	2.8	1.9	37.3	No Limit		
		EP075(SIM): Indeno(1,2,3 cd)pyrene	193-39-5	0.5	mg/kg	1.2	0.9	31.0	No Limit		
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	1.4	1.1	24.6	No Limit		
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	4.0	2.7	39.1	No Limit		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4294873)											
EB2210677-003	BH14-2	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(b+i)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
			205-82-3								
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Indeno(1,2,3 cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4293015)											
EB2210667-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit		
EB2210667-047	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit		

Sub-Matrix: SOIL			Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4293024)									
EB2210667-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EB2210667-047	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4293034)									
EB2210677-044	BH19-5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EB2210691-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4293036)									
EB2210677-044	BH19-5	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	120	130	9.7	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4294837)									
EB2210342-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EB2210342-011	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4294838)									
EB2208345-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	880	640	31.8	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	720	540	28.6	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	330	250	27.7	No Limit
EB2210342-007	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	410	520	23.5	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	170	220	22.5	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	90	120	25.9	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4293015)									
EB2210667-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EB2210667-047	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4293024)									
EB2210667-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EB2210667-047	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4293034)									
EB2210677-044	BH19-5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EB2210691-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4293036)									
EB2210677-044	BH19-5	EP071: >C16 - C34 Fraction	----	100	mg/kg	120	130	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	170	190	12.9	No Limit



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Work Order : EB2210677
Client : BUTLER PARTNERS PTY LTD
Project : 018-150M

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4293036) - continued									
EB2210677-044	BH19-5	EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4294837)									
EB2210342-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EB2210342-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4294838)									
EB2208345-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	1160	860	29.8	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	310	<210	37.8	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	530	390	30.8	No Limit
		EP071: >C16 - C34 Fraction	----	100	mg/kg	450	570	22.6	No Limit
EB2210342-007	Anonymous	EP071: >C34 - C40 Fraction	----	100	mg/kg	220	280	22.7	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	160	210	27.0	No Limit
EP080: BTEXN (QC Lot: 4293015)									
EB2210667-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EB2210667-047	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP080: BTEXN (QC Lot: 4293034)									
EB2210677-044	BH19-5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EB2210691-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EP080: BTEXN (QC Lot: 4293034) - continued										
EB2210691-002	Anonymous	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
EP080: BTEXN (QC Lot: 4294837)										
EB2210342-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit	
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		EP080: Benzene	71-43-2	0.2	mg/kg	0.3	0.3	0.0	No Limit	
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
EB2210342-011		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Naphthalene	91-20-3	1	mg/kg	4	4	0.0	No Limit	
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4293557)										
EB2210468-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0003	0.0004	0.0	No Limit	
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
EB2210719-005		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4293557)										
EB2210468-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit	

Sub-Matrix: SOIL			Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4293557) - continued									
EB2210468-001 EB2210719-005	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit		
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit		
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit		
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4293557)									
EB2210468-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit		
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit		
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit		
EB2210719-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4293557)									



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4293557) - continued									
EB2210468-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2210719-005	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit



Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Laboratory Control Spike (LCS) Report				
				Method Blank (MB) Report		Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result				
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4293014)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	83.4 mg/kg	112	84.0	123
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
EG005T: Chromium	7440-47-3	2	mg/kg	<2	14.1 mg/kg	99.6	83.0	125
EG005T: Copper	7440-50-8	5	mg/kg	<5	50 mg/kg	93.5	86.0	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.4 mg/kg	98.7	84.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	11.8 mg/kg	99.5	81.5	118
EG005T: Zinc	7440-66-6	5	mg/kg	<5	148.7 mg/kg	95.9	80.0	120
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4293032)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	83.4 mg/kg	104	84.0	123
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
EG005T: Chromium	7440-47-3	2	mg/kg	<2	14.1 mg/kg	102	83.0	125
EG005T: Copper	7440-50-8	5	mg/kg	<5	50 mg/kg	93.9	86.0	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.4 mg/kg	96.2	84.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	11.8 mg/kg	105	81.5	118
EG005T: Zinc	7440-66-6	5	mg/kg	<5	148.7 mg/kg	93.6	80.0	120
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4294868)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	83.4 mg/kg	103	84.0	123
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
EG005T: Chromium	7440-47-3	2	mg/kg	<2	14.1 mg/kg	102	83.0	125
EG005T: Copper	7440-50-8	5	mg/kg	<5	50 mg/kg	99.9	86.0	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.4 mg/kg	100	84.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	11.8 mg/kg	99.4	81.5	118
EG005T: Zinc	7440-66-6	5	mg/kg	<5	148.7 mg/kg	94.8	80.0	120
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4294870)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	83.4 mg/kg	108	84.0	123
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
EG005T: Chromium	7440-47-3	2	mg/kg	<2	14.1 mg/kg	105	83.0	125
EG005T: Copper	7440-50-8	5	mg/kg	<5	50 mg/kg	93.6	86.0	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.4 mg/kg	100	84.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	11.8 mg/kg	101	81.5	118
EG005T: Zinc	7440-66-6	5	mg/kg	<5	148.7 mg/kg	98.7	80.0	120
EA002: pH 1:5 (Soils) (QCLot: 4293041)								
EA002: pH Value	-----	-----	pH Unit	-----	4 pH Unit	99.5	98.0	102
				-----	7 pH Unit	100	98.0	102



Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Low	High
EA010: Conductivity (1:5) (QCLot: 4293040)									
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	98.5		97.0	103
ED006: Exchangeable Cations on Alkaline Soils (QCLot: 4299006)									
ED006: Exchangeable Calcium	-----	0.2	meq/100g	<0.2	8.0039 meq/100g	110		70.0	130
ED006: Exchangeable Magnesium	-----	0.2	meq/100g	<0.2	5.5128 meq/100g	106		70.0	130
ED006: Exchangeable Potassium	-----	0.2	meq/100g	<0.2	1.2397 meq/100g	124		70.0	130
ED006: Exchangeable Sodium	-----	0.2	meq/100g	<0.2	2.0342 meq/100g	117		70.0	130
ED006: Cation Exchange Capacity	-----	0.2	meq/100g	<0.2	16.7906 meq/100g	111		70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4293013)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	96.3		70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4293033)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	103		70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4294869)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	113		70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4294871)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	104		70.0	125
EK055: Ammonia as N (QCLot: 4299833)									
EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	25 mg/kg	93.8		80.0	110
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4293042)									
EK059G: Nitrite + Nitrate as N (Sol.)	-----	0.1	mg/kg	<0.1	2.5 mg/kg	96.1		83.2	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4296077)									
EK061G: Total Kjeldahl Nitrogen as N	-----	20	mg/kg	<20	306 mg/kg	111		70.0	130
				<20	2180 mg/kg	95.1		72.0	128
EP068A: Organochlorine Pesticides (OC) (QCLot: 4293025)									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.6		72.8	127
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	101		71.0	127
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	103		67.5	126
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	102		72.7	127
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.4		70.6	122
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.8		64.8	127
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.0		72.4	122
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	97.0		67.4	125
EP068: Total Chlordane (sum)	-----	0.05	mg/kg	<0.05	-----	-----		-----	-----
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	96.0		65.6	124
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	102		70.4	122
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.2		65.6	125
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	102		69.1	124
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	102		72.4	125



Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4293025) - continued									
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.6	63.2	127	
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.7	120	
EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	---	---	---	---	
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	61.2	124	
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.9	55.5	125	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.1	57.1	117	
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	107	51.9	125	
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	88.5	46.5	122	
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	92.8	34.0	130	
EP068: Sum of DDD + DDE + DDT	72-54-8/72-5 5-9/50-2	0.05	mg/kg	<0.05	---	---	---	---	
EP068: Sum of Aldrin + Dieldrin	309-00-2/60- 57-1	0.05	mg/kg	<0.05	---	---	---	---	
EP068A: Organochlorine Pesticides (OC) (QCLot: 4293037)									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.7	72.8	127	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.4	71.0	127	
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	95.0	67.5	126	
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.5	72.7	127	
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	70.6	122	
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	88.9	64.8	127	
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.5	72.4	122	
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	96.7	67.4	125	
EP068: Total Chlordane (sum)	---	0.05	mg/kg	<0.05	---	---	---	---	
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	65.6	124	
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	106	70.4	122	
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	109	65.6	125	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	69.1	124	
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.2	72.4	125	
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	63.2	127	
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	96.7	69.7	120	
EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	---	---	---	---	
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	61.2	124	
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	89.3	55.5	125	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	57.1	117	
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	81.2	51.9	125	
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	46.5	122	
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	77.8	34.0	130	
EP068: Sum of DDD + DDE + DDT	72-54-8/72-5 5-9/50-2	0.05	mg/kg	<0.05	---	---	---	---	



Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4293037) - continued									
EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC) (QCLot: 4294872)									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.3	72.8	127	127
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	71.0	127	127
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	95.7	67.5	126	126
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.2	72.7	127	127
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.4	70.6	122	122
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	64.8	127	127
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.1	72.4	122	122
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	67.4	125	125
EP068: Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----	----
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.5	65.6	124	124
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	70.4	122	122
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	65.6	125	125
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	98.7	69.1	124	124
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	103	72.4	125	125
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	100	63.2	127	127
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	96.1	69.7	120	120
EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----	----
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	61.2	124	124
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	92.4	55.5	125	125
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	57.1	117	117
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	106	51.9	125	125
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	84.4	46.5	122	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	94.0	34.0	130	130
EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	----	----	----
EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4293026)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	97.1	72.6	133	133
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	86.4	63.2	144	144
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	97.6	66.0	132	132
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	97.4	76.2	134	134
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	90.6	71.8	137	137
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	99.8	77.1	143	143
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	102	74.1	140	140
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	103	72.0	139	139



Sub-Matrix: **SOIL**

Method: Compound				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
CAS Number				Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Acceptable Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4293026) - continued				LOR					
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	77.9	58.0	145	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	89.9	63.0	147	
EP075(SIM): Benzo(b+h)fluoranthene	205-99-2	0.5	mg/kg	<0.5	1.5 mg/kg	101	70.5	142	
	205-82-3								
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	101	75.5	138	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	83.9	68.5	140	
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	106	58.4	143	
EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	107	52.1	149	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	105	64.6	140	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4293035)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	121	72.6	133	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	123	63.2	144	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	121	66.0	132	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	126	76.2	134	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	115	71.8	137	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	122	77.1	143	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	127	74.1	140	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	126	72.0	139	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	120	58.0	145	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	111	63.0	147	
EP075(SIM): Benzo(b+h)fluoranthene	205-99-2	0.5	mg/kg	<0.5	1.5 mg/kg	130	70.5	142	
	205-82-3								
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	127	75.5	138	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	110	68.5	140	
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	133	58.4	143	
EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	135	52.1	149	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	128	64.6	140	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4294839)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	102	72.6	133	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	107	63.2	144	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	104	66.0	132	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	105	76.2	134	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	99.0	71.8	137	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	111	77.1	143	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	118	74.1	140	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	116	72.0	139	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	110	58.0	145	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	106	63.0	147	

Sub-Matrix: SOIL									
Method: Compound				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
CAS Number		LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4294839) - continued									
EP075(SIM): Benzo(b+)fluoranthene		205-99-2	0.5	mg/kg	<0.5	1.5 mg/kg	107	70.5	142
		205-82-3							
EP075(SIM): Benzo(k)fluoranthene		207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	119	75.5	138
EP075(SIM): Benzo(a)pyrene		50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	92.9	68.5	140
EP075(SIM): Indeno(1,2,3-cd)pyrene		193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	111	58.4	143
EP075(SIM): Dibenz(a,h)anthracene		53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	110	52.1	149
EP075(SIM): Benzo(g,h,i)perylene		191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	108	64.6	140
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4294873)									
EP075(SIM): Naphthalene		91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	94.4	72.6	133
EP075(SIM): Acenaphthylene		208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	92.2	63.2	144
EP075(SIM): Acenaphthene		83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	103	66.0	132
EP075(SIM): Fluorene		86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	102	76.2	134
EP075(SIM): Phenanthrene		85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	97.6	71.8	137
EP075(SIM): Anthracene		120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	106	77.1	143
EP075(SIM): Fluoranthene		206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	102	74.1	140
EP075(SIM): Pyrene		129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	102	72.0	139
EP075(SIM): Benz(a)anthracene		56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	90.8	58.0	145
EP075(SIM): Chrysene		218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	84.9	63.0	147
EP075(SIM): Benzo(b+)fluoranthene		205-99-2	0.5	mg/kg	<0.5	1.5 mg/kg	94.0	70.5	142
		205-82-3							
EP075(SIM): Benzo(k)fluoranthene		207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	92.6	75.5	138
EP075(SIM): Benzo(a)pyrene		50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	91.3	68.5	140
EP075(SIM): Indeno(1,2,3-cd)pyrene		193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	97.2	58.4	143
EP075(SIM): Dibenz(a,h)anthracene		53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	97.5	52.1	149
EP075(SIM): Benzo(g,h,i)perylene		191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	92.4	64.6	140
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4293015)									
EP080: C6 - C9 Fraction		---	10	mg/kg	<10	18 mg/kg	93.8	64.0	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4293024)									
EP071: C10 - C14 Fraction		---	50	mg/kg	<50	310 mg/kg	98.9	79.4	125
EP071: C15 - C28 Fraction		---	100	mg/kg	<100	490 mg/kg	110	78.8	122
EP071: C29 - C36 Fraction		---	100	mg/kg	<100	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4293034)									
EP080: C6 - C9 Fraction		---	10	mg/kg	<10	18 mg/kg	103	64.0	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4293036)									
EP071: C10 - C14 Fraction		---	50	mg/kg	<50	310 mg/kg	102	79.4	125
EP071: C15 - C28 Fraction		---	100	mg/kg	<100	490 mg/kg	102	78.8	122
EP071: C29 - C36 Fraction		---	100	mg/kg	<100	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4294837)									



Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	Low	High
EP080/074: Total Petroleum Hydrocarbons (QCLot: 4294837) - continued									
EP080: C6 - C9 Fraction	-----	10	mg/kg	<10	18 mg/kg	77.5		64.0	120
EP080/074: Total Petroleum Hydrocarbons (QCLot: 4294838)									
EP071: C10 - C14 Fraction	-----	50	mg/kg	<50	310 mg/kg	99.6		79.4	125
EP071: C15 - C28 Fraction	-----	100	mg/kg	<100	490 mg/kg	94.6		78.8	122
EP071: C29 - C36 Fraction	-----	100	mg/kg	<100	-----	-----		-----	-----
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4293015)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	22.5 mg/kg	92.6		58.1	124
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4293024)									
EP071: >C10 - C16 Fraction	-----	50	mg/kg	<50	450 mg/kg	106		81.0	132
EP071: >C16 - C34 Fraction	-----	100	mg/kg	<100	320 mg/kg	109		67.2	130
EP071: >C34 - C40 Fraction	-----	100	mg/kg	<100	-----	-----		-----	-----
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4293034)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	22.5 mg/kg	102		58.1	124
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4293036)									
EP071: >C10 - C16 Fraction	-----	50	mg/kg	<50	450 mg/kg	100		81.0	132
EP071: >C16 - C34 Fraction	-----	100	mg/kg	<100	320 mg/kg	104		67.2	130
EP071: >C34 - C40 Fraction	-----	100	mg/kg	<100	-----	-----		-----	-----
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4294837)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	22.5 mg/kg	79.8		58.1	124
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4294838)									
EP071: >C10 - C16 Fraction	-----	50	mg/kg	<50	450 mg/kg	96.6		81.0	132
EP071: >C16 - C34 Fraction	-----	100	mg/kg	<100	320 mg/kg	97.4		67.2	130
EP071: >C34 - C40 Fraction	-----	100	mg/kg	<100	-----	-----		-----	-----
EP080: BTEXN (QCLot: 4293015)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	86.2		68.0	107
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	88.8		69.0	108
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	94.0		68.0	109
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	97.9		70.0	114
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	95.1		74.0	116
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	87.7		74.0	109
EP080: BTEXN (QCLot: 4293034)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	91.2		68.0	107
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	89.9		69.0	108
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	97.1		68.0	109
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	104		70.0	114



Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	Low	High
EP080: BTEXN (QCLot: 4293034) - continued									
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	102	74.0	74.0	116
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	94.5	74.0	74.0	109
EP080: BTEXN (QCLot: 4294837)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	82.2	68.0	68.0	107
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	81.6	69.0	69.0	108
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	84.4	68.0	68.0	109
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	89.0	70.0	70.0	114
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	91.0	74.0	74.0	116
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	87.6	74.0	74.0	109
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4293557)									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	96.8	72.0	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	94.4	73.0	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	93.6	67.0	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	98.7	70.0	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	87.5	68.0	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	83.3	59.0	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4293557)									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	103	71.0	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.6	69.0	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.8	70.0	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.0	71.0	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	69.0	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.4	72.0	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.4	69.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.0	64.0	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.8	69.0	69.0	135
EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	66.0	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.4	69.0	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4293557)									
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.4	67.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	109	59.6	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.8	62.8	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.0	61.5	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	113	61.9	61.9	137



Sub-Matrix: **SOIL**

Method: Compound				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
CAS Number				LOR	Unit	Result	Concentration	Spike	Acceptable Limits (%)
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4293557) - continued								Spike Recovery (%)	Low
								LCS	High
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002		0.00125 mg/kg	90.8	63.0
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002		0.00125 mg/kg	92.4	61.0
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4293557)									
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005		0.00117 mg/kg	86.8	62.0
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005		0.00118 mg/kg	95.3	64.0
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005		0.0012 mg/kg	80.4	65.0
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005		0.0012 mg/kg	85.4	54.8

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL			Matrix Spike (MS) Report					
			Spike		SpikeRecovery(%)		Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4293014)								
EB2210667-007	Anonymous	EG005T: Arsenic	7440-38-2	100 mg/kg	86.3	70.0	130	
		EG005T: Cadmium	7440-43-9	25 mg/kg	92.1	70.0	130	
		EG005T: Chromium	7440-47-3	100 mg/kg	88.8	70.0	130	
		EG005T: Copper	7440-50-8	100 mg/kg	90.1	70.0	130	
		EG005T: Lead	7439-92-1	100 mg/kg	89.6	70.0	130	
		EG005T: Nickel	7440-02-0	100 mg/kg	89.9	70.0	130	
		EG005T: Zinc	7440-66-6	100 mg/kg	88.1	70.0	130	
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4293032)								
EB2210677-065	BH22-2	EG005T: Arsenic	7440-38-2	100 mg/kg	88.6	70.0	130	
		EG005T: Cadmium	7440-43-9	25 mg/kg	92.7	70.0	130	
		EG005T: Chromium	7440-47-3	100 mg/kg	88.5	70.0	130	
		EG005T: Copper	7440-50-8	100 mg/kg	84.3	70.0	130	
		EG005T: Lead	7439-92-1	100 mg/kg	89.1	70.0	130	
		EG005T: Nickel	7440-02-0	100 mg/kg	88.5	70.0	130	
		EG005T: Zinc	7440-66-6	100 mg/kg	88.7	70.0	130	
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4294868)								
EB2210677-005	BH14-4	EG005T: Arsenic	7440-38-2	100 mg/kg	85.3	70.0	130	
		EG005T: Cadmium	7440-43-9	25 mg/kg	89.8	70.0	130	
		EG005T: Chromium	7440-47-3	100 mg/kg	88.0	70.0	130	
		EG005T: Copper	7440-50-8	100 mg/kg	91.5	70.0	130	



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL			Matrix Spike (MS) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4294868) - continued							
EB2210677-005	BH14-4	EG005T: Lead	7439-92-1	100 mg/kg	92.9	70.0	130
		EG005T: Nickel	7440-02-0	100 mg/kg	86.6	70.0	130
		EG005T: Zinc	7440-66-6	100 mg/kg	82.9	70.0	130
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4294870)							
EB2210677-073	BH23-4	EG005T: Arsenic	7440-38-2	100 mg/kg	79.7	70.0	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	87.2	70.0	130
		EG005T: Chromium	7440-47-3	100 mg/kg	83.9	70.0	130
		EG005T: Copper	7440-50-8	100 mg/kg	89.1	70.0	130
		EG005T: Lead	7439-92-1	100 mg/kg	89.4	70.0	130
		EG005T: Nickel	7440-02-0	100 mg/kg	84.7	70.0	130
		EG005T: Zinc	7440-66-6	100 mg/kg	93.4	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4293013)							
EB2210667-007	Anonymous	EG035T: Mercury	7439-97-6	0.5 mg/kg	89.6	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4293033)							
EB2210677-065	BH22-2	EG035T: Mercury	7439-97-6	0.5 mg/kg	82.4	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4294869)							
EB2210677-005	BH14-4	EG035T: Mercury	7439-97-6	0.5 mg/kg	86.9	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4294871)							
EB2210677-073	BH23-4	EG035T: Mercury	7439-97-6	0.5 mg/kg	94.6	70.0	130
EK055: Ammonia as N (QCLot: 4299833)							
EB2210677-070	BH23-1	EK055: Ammonia as N	7664-41-7	100 mg/kg	74.1	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4296077)							
EB2207145-007	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	500 mg/kg	112	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4293025)							
EB2210667-007	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	101	70.0	136
		EP068: Heptachlor	76-44-8	0.5 mg/kg	96.0	65.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	99.0	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	101	67.0	129
		EP068: Endrin	72-20-8	0.5 mg/kg	100	60.0	137
		EP068: 4,4'-DDT	50-29-3	0.5 mg/kg	104	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4294872)							
EB2210677-048	BH20-1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	105	70.0	136
		EP068: Heptachlor	76-44-8	0.5 mg/kg	108	65.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	104	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	103	67.0	129
		EP068: Endrin	72-20-8	0.5 mg/kg	105	60.0	137

Sub-Matrix: SOIL					Matrix Spike (MS) Report			
Laboratory sample ID		Sample ID	Method: Compound	CAS Number	Spike Concentration	SpikeRecovery(%)	Acceptable Limits (%)	
						MS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4294872) - continued								
EB2210677-048	BH20-1		EP068: 4,4'-DDT	50-29-3	0.5 mg/kg	111	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4293026)								
EB2210677-010	BH15-1		EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	96.8	66.0	132
			EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	110	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4293035)								
EB2210677-071	BH23-2		EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	111	66.0	132
			EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	113	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4294839)								
EB2208345-002	Anonymous		EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	103	66.0	132
			EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	112	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4294873)								
EB2210677-024	BH17-1		EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	102	66.0	132
			EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	97.6	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4293015)								
EB2210667-007	Anonymous		EP080: C6 - C9 Fraction	-----	8 mg/kg	88.2	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4293024)								
EB2210667-007	Anonymous		EP071: C10 - C14 Fraction	-----	310 mg/kg	101	70.0	130
			EP071: C15 - C28 Fraction	-----	490 mg/kg	110	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4293034)								
EB2210677-065	BH22-2		EP080: C6 - C9 Fraction	-----	8 mg/kg	98.4	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4293036)								
EB2210677-065	BH22-2		EP071: C10 - C14 Fraction	-----	310 mg/kg	74.9	70.0	130
			EP071: C15 - C28 Fraction	-----	490 mg/kg	72.1	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4294837)								
EB2210342-002	Anonymous		EP080: C6 - C9 Fraction	-----	8 mg/kg	84.2	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4294838)								
EB2208345-002	Anonymous		EP071: C10 - C14 Fraction	-----	310 mg/kg	115	70.0	130
			EP071: C15 - C28 Fraction	-----	490 mg/kg	119	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4293015)								
EB2210667-007	Anonymous		EP080: C6 - C10 Fraction	C6_C10	8 mg/kg	86.2	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4293024)								
EB2210667-007	Anonymous		EP071: >C10 - C16 Fraction	-----	450 mg/kg	108	70.0	130
			EP071: >C16 - C34 Fraction	-----	320 mg/kg	110	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4293034)								



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL			Matrix Spike (MS) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4293034) - continued							
EB2210677-065	BH22-2	EP080: C6 - C10 Fraction	C6_C10	8 mg/kg	93.8	70.0	130
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4293036)							
EB2210677-065	BH22-2	EP071: >C10 - C16 Fraction	----	450 mg/kg	74.3	70.0	130
		EP071: >C16 - C34 Fraction	----	320 mg/kg	80.4	70.0	130
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4294837)							
EB2210342-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	8 mg/kg	84.3	70.0	130
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4294838)							
EB2208345-002	Anonymous	EP071: >C10 - C16 Fraction	----	450 mg/kg	113	70.0	130
		EP071: >C16 - C34 Fraction	----	320 mg/kg	# 158	70.0	130
EP080: BTEXN (QCLot: 4293015)							
EB2210667-007	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	84.2	70.0	130
		EP080: Toluene	108-88-3	2 mg/kg	81.4	70.0	130
EP080: BTEXN (QCLot: 4293034)							
EB2210677-065	BH22-2	EP080: Benzene	71-43-2	2 mg/kg	90.3	70.0	130
		EP080: Toluene	108-88-3	2 mg/kg	87.7	70.0	130
EP080: BTEXN (QCLot: 4294837)							
EB2210342-002	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	87.1	70.0	130
		EP080: Toluene	108-88-3	2 mg/kg	85.7	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4293557)							
EB2210552-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	97.3	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	95.7	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	97.5	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	97.5	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	127	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	88.3	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4293557)							
EB2210552-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	99.9	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	85.2	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	102	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	92.0	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	104	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	92.8	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	87.2	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	88.4	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	96.8	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	90.0	66.0	139



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report		
				Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4293557) - continued						
EB2210552-002	Anonymous	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	99.8	69.0 133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4293557)						
EB2210552-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	94.0	48.0 128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	108	70.0 130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	101	70.0 130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	103	70.0 130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	110	70.0 130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	90.4	63.0 144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	94.4	61.0 139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4293557)						
EB2210552-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	86.7	62.0 145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	91.5	64.0 140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	85.4	65.0 137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	97.9	70.0 130



Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EB2210677	Page	: 1 of 13
Client	: BUTLER PARTNERS PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MS SUZANNE WALKER	Telephone	: +61-7-3243 7222
Project	: 018-150M	Date Samples Received	: 14-Apr-2022
Site	: 89 Macarthur Ave, Hamilton	Issue Date	: 03-May-2022
Sampler	: RICHARD PEARCE	No. of samples received	: 91
Order number	: BP202052	No. of samples analysed	: 48

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- NO Method Blank value outliers occur.
- NO Laboratory Control outliers occur.
- Duplicate outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.

Outliers : Analysis Holding Time Compliance

- NO Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005(ED093)T: Total Metals by ICP-AES	EB2210677--003	BH14-2	Chromium	7440-47-3	23.2 %	0% - 20%	RPD exceeds LOR based limits
EG005(ED093)T: Total Metals by ICP-AES	EB2210677--044	BH19-5	Nickel	7440-02-0	73.8 %	0% - 50%	RPD exceeds LOR based limits
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	EB2210342--007	Anonymous	Fluoranthene	206-44-0	28.7 %	0% - 20%	RPD exceeds LOR based limits
Matrix Spike (MS) Recoveries							
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	EB2208345--002	Anonymous	>C16 - C34 Fraction	----	158 %	70.0-130%	Recovery greater than upper data quality objective

Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068T: Organophosphorus Pesticide Surrogate	EB2210677-002	BH14-1	DEF	78-48-8	136 %	22.8-134 %	Recovery greater than upper data quality objective
EP068T: Organophosphorus Pesticide Surrogate	EB2210677-048	BH20-1	DEF	78-48-8	144 %	22.8-134 %	Recovery greater than upper data quality objective
EP068T: Organophosphorus Pesticide Surrogate	EB2210677-078	BH24-1	DEF	78-48-8	146 %	22.8-134 %	Recovery greater than upper data quality objective

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification	
	QC	Regular	Actual	Expected		
Matrix Spikes (MS)						
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard	

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date		Extraction / Preparation		Analysis	
	Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA002: pH 1:5 (Soils)						
Soil Glass Jar - Unpreserved (EA002)						
BH23-1	13-Apr-2022	20-Apr-2022	✓	20-Apr-2022	20-Apr-2022	✓



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

Method		Extraction / Preparation			Analysis		
Container / Client Sample ID(s)	Sample Date	Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA010: Conductivity (1:5)							
Soil Glass Jar - Unpreserved (EA010)							
BH23-1	13-Apr-2022	20-Apr-2022	20-Apr-2022	✓	20-Apr-2022	18-May-2022	✓
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055)							
BH16-1, BH18-1, BH22-2, BH24-4	13-Apr-2022				20-Apr-2022	27-Apr-2022	✓
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
QC01,	12-Apr-2022				20-Apr-2022	26-Apr-2022	✓
Soil Glass Jar - Unpreserved (EA055)							
BH14-1, BH14-3, BH15-1, BH15-3, BH16-4, BH17-4, BH18-4, BH19-1, BH19-3, BH19-6, BH20-3, BH20-5, BH21-2, BH21-6, BH22-3, BH23-1, BH23-4, BH24-2,	13-Apr-2022				20-Apr-2022	27-Apr-2022	✓
QC03							
ED005: Exchange Acidity							
Soil Glass Jar - Unpreserved (ED005)							
BH23-1	13-Apr-2022	22-Apr-2022	11-May-2022	✓	22-Apr-2022	11-May-2022	✓
ED006: Exchangeable Cations on Alkaline Soils							
Soil Glass Jar - Unpreserved (ED006)							
BH23-1	13-Apr-2022	22-Apr-2022	11-May-2022	✓	28-Apr-2022	11-May-2022	✓
ED007: Exchangeable Cations							
Soil Glass Jar - Unpreserved (ED007)							
BH23-1	13-Apr-2022	22-Apr-2022	11-May-2022	✓	22-Apr-2022	11-May-2022	✓



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

Method		Sample Date	Extraction / Preparation		Analysis			
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Due for analysis		
ED008: Exchangeable Cations								
Soil Glass Jar - Unpreserved (ED008)		13-Apr-2022	22-Apr-2022	11-May-2022	✓	22-Apr-2022	11-May-2022	✓
BH23-1								
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)		12-Apr-2022	26-Apr-2022	09-Oct-2022	✓	30-Apr-2022	09-Oct-2022	✓
QC01, QC03								
Soil Glass Jar - Unpreserved (EG005T)		13-Apr-2022	20-Apr-2022	10-Oct-2022	✓	23-Apr-2022	10-Oct-2022	✓
BH14-3, BH15-1, BH15-2, BH17-2, BH18-1, BH18-3,								
Soil Glass Jar - Unpreserved (EG005T)		13-Apr-2022	26-Apr-2022	10-Oct-2022	✓	27-Apr-2022	10-Oct-2022	✓
BH22-2, BH23-2, BH24-3, BH24-4								
Soil Glass Jar - Unpreserved (EG005T)		13-Apr-2022	26-Apr-2022	10-Oct-2022	✓	30-Apr-2022	10-Oct-2022	✓
BH14-2, BH15-3, BH16-4, BH17-4, BH18-8, BH19-3, BH20-3, BH20-5, BH21-2, BH21-6, BH22-4, BH24-1, QC05								



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

Method	Sample Date	Extraction / Preparation		Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Date analysed	Due for analysis
EG035T: Total Recoverable Mercury by FIMS					
Soil Glass Jar - Unpreserved (EG035T) QC01, QC03	12-Apr-2022	26-Apr-2022	10-May-2022	30-Apr-2022	10-May-2022
	13-Apr-2022	20-Apr-2022	11-May-2022	23-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	27-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
Soil Glass Jar - Unpreserved (EG035T) BH14-2, BH14-4, BH15-3, BH16-4, BH17-4, BH18-2, BH18-8, BH19-1, BH19-3, BH20-3, BH20-4, BH20-5, BH21-2, BH21-4, BH21-6, BH22-1, BH22-4, BH24-1, BH24-2, QC05	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
	13-Apr-2022	26-Apr-2022	11-May-2022	30-Apr-2022	11-May-2022
EK055: Ammonia as N					
Soil Glass Jar - Unpreserved (EK055) BH23-1	13-Apr-2022	20-Apr-2022	11-May-2022	22-Apr-2022	11-May-2022
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser					
Soil Glass Jar - Unpreserved (EK059G) BH23-1	13-Apr-2022	20-Apr-2022	11-May-2022	20-Apr-2022	22-Apr-2022
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser					
Soil Glass Jar - Unpreserved (EK061G) BH23-1	13-Apr-2022	26-Apr-2022	11-May-2022	27-Apr-2022	24-May-2022



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

Method	Sample Date	Extraction / Preparation		Analysis					
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Due for analysis	Evaluation			
EP068A: Organochlorine Pesticides (OC)									
Soil Glass Jar - Unpreserved (EP068) BH15-1, BH17-2	BH16-1,	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	21-Apr-2022	30-May-2022	✓	
		13-Apr-2022	22-Apr-2022	27-Apr-2022	✓	28-Apr-2022	01-Jun-2022	✓	
		13-Apr-2022	26-Apr-2022	27-Apr-2022	✓	28-Apr-2022	05-Jun-2022	✓	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Soil Glass Jar - Unpreserved (EP075(SIM)) BH14-3, BH15-2,	BH15-1, BH19-2	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	21-Apr-2022	30-May-2022	✓	
		13-Apr-2022	21-Apr-2022	27-Apr-2022	✓	22-Apr-2022	31-May-2022	✓	
		13-Apr-2022	22-Apr-2022	27-Apr-2022	✓	28-Apr-2022	01-Jun-2022	✓	
Soil Glass Jar - Unpreserved (EP075(SIM)) BH19-5, BH20-3	BH23-2	13-Apr-2022	26-Apr-2022	27-Apr-2022	✓	28-Apr-2022	05-Jun-2022	✓	
		13-Apr-2022							
		13-Apr-2022							
Soil Glass Jar - Unpreserved (EP075(SIM)) BH14-2, BH18-2, BH21-2,	BH17-1, BH20-4, BH22-4	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	21-Apr-2022	30-May-2022	✓	
		13-Apr-2022	21-Apr-2022	27-Apr-2022	✓	22-Apr-2022	31-May-2022	✓	
		13-Apr-2022	22-Apr-2022	27-Apr-2022	✓	28-Apr-2022	01-Jun-2022	✓	



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

Method		Sample Date	Extraction / Preparation		Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Date analysed	Due for analysis
EP080/071: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved (EP080) Trip Spike 7, BH14-3, BH15-2, BH17-2, BH18-3, BH19-2	ALS Control Spike	12-Apr-2022	20-Apr-2022	26-Apr-2022	✓	26-Apr-2022
	BH15-1, BH16-1, BH18-1, BH18-4,	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	27-Apr-2022
	BH15-1, BH16-1, BH18-1, BH18-4,	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	30-May-2022
	BH19-2	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	27-Apr-2022
Soil Glass Jar - Unpreserved (EP080) BH19-5, BH23-1, BH24-3, Trip Blank 032809	BH22-2, BH23-2, BH24-4,	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	27-Apr-2022
		13-Apr-2022	21-Apr-2022	27-Apr-2022	✓	31-May-2022
		13-Apr-2022	21-Apr-2022	27-Apr-2022	✓	27-Apr-2022
		13-Apr-2022	22-Apr-2022	27-Apr-2022	✓	01-Jun-2022



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

Method		Sample Date	Extraction / Preparation		Evaluation	Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction		Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP080) Trip Spike 7,	ALS Control Spike	12-Apr-2022	20-Apr-2022	26-Apr-2022	✓	26-Apr-2022	✓	
		13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	20-Apr-2022	✓	
			20-Apr-2022	27-Apr-2022	✓	21-Apr-2022	30-May-2022	✓
Soil Glass Jar - Unpreserved (EP071) BH14-3, BH15-2, BH17-2, BH18-3, BH19-2	BH15-1, BH16-1, BH18-1, BH18-4,	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	21-Apr-2022	✓	
		13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	26-Apr-2022	27-Apr-2022	✓
Soil Glass Jar - Unpreserved (EP080) BH19-5, BH23-1, BH24-3, Trip Blank 032809	BH22-2, BH23-2, BH24-4,	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	26-Apr-2022	✓	
		13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	22-Apr-2022	31-May-2022	✓
Soil Glass Jar - Unpreserved (EP071) BH19-5, BH23-1, BH24-3,	BH22-2, BH23-2, BH24-4	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	26-Apr-2022	✓	
		13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	28-Apr-2022	01-Jun-2022	✓
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080) Trip Spike 7,	ALS Control Spike	12-Apr-2022	20-Apr-2022	26-Apr-2022	✓	26-Apr-2022	✓	
		13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	20-Apr-2022	27-Apr-2022	✓
Soil Glass Jar - Unpreserved (EP080) BH14-3, BH15-2, BH17-2, BH18-3, BH19-2	BH15-1, BH16-1, BH18-1, BH18-4,	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	26-Apr-2022	✓	
		13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	26-Apr-2022	27-Apr-2022	✓
Soil Glass Jar - Unpreserved (EP080) BH19-5, BH23-1, BH24-3, Trip Blank 032809	BH22-2, BH23-2, BH24-4,	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	26-Apr-2022	✓	
		13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	26-Apr-2022	27-Apr-2022	✓
Soil Glass Jar - Unpreserved (EP080) BH19-5, BH23-1, BH24-3,	BH22-2, BH23-2, BH24-4,	13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	26-Apr-2022	✓	
		13-Apr-2022	20-Apr-2022	27-Apr-2022	✓	26-Apr-2022	27-Apr-2022	✓



Page : 9 of 13
Work Order : EB2210677
Client : BUTLER PARTNERS PTY LTD
Project : 018-150M

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

Method		Sample Date	Extraction / Preparation		Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Due for analysis
EP231A: Perfluoroalkyl Sulfonic Acids						
HDPE Soil Jar (EP231X) BH17-1, BH22-3		13-Apr-2022	20-Apr-2022	10-Oct-2022	✓	27-Apr-2022
EP231B: Perfluoroalkyl Carboxylic Acids						
HDPE Soil Jar (EP231X) BH17-1, BH22-3		13-Apr-2022	20-Apr-2022	10-Oct-2022	✓	27-Apr-2022
EP231C: Perfluoroalkyl Sulfonamides						
HDPE Soil Jar (EP231X) BH17-1, BH22-3		13-Apr-2022	20-Apr-2022	10-Oct-2022	✓	27-Apr-2022
EP231D: (n:2) Fluorotelomer Sulfonic Acids						
HDPE Soil Jar (EP231X) BH17-1, BH22-3		13-Apr-2022	20-Apr-2022	10-Oct-2022	✓	27-Apr-2022
EP231P: PFAS Sums						
HDPE Soil Jar (EP231X) BH17-1, BH22-3		13-Apr-2022	20-Apr-2022	10-Oct-2022	✓	27-Apr-2022



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification	
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Buchi Ammonia	EK055	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Electrical Conductivity (1:5)	EA010	1	1	100.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED006	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	10	82	12.20	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NO _x) - Soluble by Discrete Analyser	EK059G	1	1	100.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	5	30	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	4	18	22.22	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	6	55	10.91	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	6	55	10.91	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	5	48	10.42	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	6	46	13.04	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Buchi Ammonia	EK055	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Electrical Conductivity (1:5)	EA010	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED006	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NO _x) - Soluble by Discrete Analyser	EK059G	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	4	30	13.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	18	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	2	5	40.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	55	7.27	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	55	7.27	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	48	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	46	6.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Buchi Ammonia	EK055	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Electrical Conductivity (1:5)	EA010	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED006	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NO _x) - Soluble by Discrete Analyser	EK059G	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **SOIL** Evaluation: ✖ = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Method	Count		Rate (%)		Quality Control Specification
Analytical Methods			QC	Regular	Actual	Expected	
Method Blanks (MB) - Continued							
PAH/Phenols (SIM)	EP075(SIM)	4	30	13.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	18	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	55	7.27	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	55	7.27	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	48	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	46	6.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Buchi Ammonia	EK055	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	0	1	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	4	30	13.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	18	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	55	7.27	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	55	7.27	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	48	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	46	6.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	In house: Referenced to Rayment and Lyons 4A1 and APHA 4500H+. pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM Schedule B(3).
Electrical Conductivity (1:5)	EA010	SOIL	In house: Referenced to Rayment and Lyons 3A1 and APHA 2510. Conductivity is determined on soil samples using a 1:5 soil/water leach. This method is compliant with NEPM Schedule B(3).
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Exchange Acidity by 1M Potassium Chloride	* ED005	SOIL	In house: referenced to Rayment and Lyons, method 15G1. This method is unsuitable for near neutral and alkaline soils. NATA accreditation does not cover performance of this service.
Exchangeable Cations on Alkaline Soils	* ED006	SOIL	In house: Referenced to Soil Survey Test Method C5. Soluble salts are removed from the sample prior to analysis. Cations are exchanged from the sample by contact with alcoholic ammonium chloride at pH 8.5. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil.
Exchangeable Cations	ED007	SOIL	In house: Referenced to Rayment & Lyons Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM Schedule B(3).
Exchangeable Cations with pre-treatment	ED008	SOIL	In house: Referenced to Rayment & Lyons Method 15A2. Soluble salts are removed from the sample prior to analysis. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Buchi Ammonia	EK055	SOIL	In house: Referenced to APHA 4500-NH3 B&G, H Samples are steam distilled (Buchi) prior to analysis and quantified using titration, FIA or Discrete Analyser.
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	SOIL	In house: Thermo Scientific Method D08727 and NEMI (National Environmental Method Index) Method ID: 9171. This method covers the determination of total oxidised nitrogen (NOx-N) and nitrate (NO3-N) by calculation, Combined oxidised Nitrogen (NO2+NO3) in a water extract is determined by direct colourimetry by Discrete Analyser.
TKN as N By Discrete Analyser	EK061G	SOIL	In house: Referenced to APHA 4500-Norg-D Soil samples are digested using Kjeldahl digestion followed by determination by Discrete Analyser.
Total Nitrogen as N (TKN + NOx) By Discrete Analyser	EK062G	SOIL	In house: Referenced to APHA 4500 Norg/NO3- Total Nitrogen is determined as the sum of TKN and Oxidised Nitrogen, each determined separately as N.



Analytical Methods		Method	Matrix	Method Descriptions
Pesticides by GC/MS		EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction		EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)		EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
TRH Volatiles/BTEX		EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS		EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Preparation Methods		Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method (Alkaline Soils)		ED006PR	SOIL	In house: Referenced to Rayment and Lyons method 15C1.
Exchangeable Cations Preparation Method		ED007PR	SOIL	In house: Referenced to Rayment & Lyons method 15A1. A 1M NH4Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
TKN/TP Digestion		EK061/EK067	SOIL	In house: Referenced to APHA 4500 Norg- D; APHA 4500 P - H. Macro Kjeldahl digestion.
1:5 solid / water leach for soluble analytes		EN34	SOIL	10 g of soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges		EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap		ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids		ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
QuEChERS Extraction of Solids		ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EB2210677

Client : BUTLER PARTNERS PTY LTD Contact : MS SUZANNE WALKER Address : PO BOX 2267 FORTITUDE VALLEY BC QLD, AUSTRALIA 4006 E-mail : skwalker@butlerpartners.com.au Telephone : +61 07 3852 3800 Facsimile : +61 07 3852 3808 Project : 018-150M Order number : BP202052 C-O-C number : 1 Site : 89 Macarthur Ave, Hamilton Sampler : RICHARD PEARCE	Laboratory : Environmental Division Brisbane Contact : Kimberly Hilton-Barber Address : 2 Byth Street Stafford QLD Australia 4053 E-mail : k.hiltonbarber@alsglobal.com Telephone : +61-7-3243 7222 Facsimile : +61-7-3243 7218 Page : 1 of 6 Quote number : EB2016BUTPAR0003 (EN/222 (Planned event Tables)) QC Level : NEPM 2013 B3 & ALS QC Standard

Dates

Date Samples Received : 14-Apr-2022 19:15 Client Requested Due Date : 03-May-2022	Issue Date : 19-Apr-2022 Scheduled Reporting Date : 03-May-2022

Delivery Details

Mode of Delivery : Client Drop Off No. of coolers/boxes : 5 Receipt Detail : MEDIUM ESKY	Security Seal : Not Available Temperature : 8.1°C, 7.6°C, 6.5°C, 7.6°C, 10.3°C - Ice present No. of samples received / analysed : 91 / 46

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please be advised that ALS has removed analyses for samples "BH20-3" and "BH20-4" (ALS #50 and #51) pending client confirmation of sample container ID discrepancy. A representative will contact you in regards to this matter.**
- **Please be advised that where the sample container ID does not match the ID listed on the sample container lid, ALS has assigned the ID listed on the sample container lid. Please keep this in mind when reviewing your results.**
- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders EB2210676/ EB2210677 due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on ALSEnviro.Brisbane@alsglobal.com**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

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

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: SOIL

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP068A (solids) Organochlorine Pesticides by GC/MS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-05 TRH/BTEXN/8 Metals	SOIL - S-26 8 metals/TRH/BTEXN/PAH
EB2210677-001	13-Apr-2022 00:00	BH13-8	✓						
EB2210677-002	13-Apr-2022 00:00	BH14-1		✓	✓				
EB2210677-003	13-Apr-2022 00:00	BH14-2		✓		✓	✓		
EB2210677-004	13-Apr-2022 00:00	BH14-3		✓					✓
EB2210677-005	13-Apr-2022 00:00	BH14-4		✓			✓		
EB2210677-006	13-Apr-2022 00:00	BH14-5	✓						
EB2210677-007	13-Apr-2022 00:00	BH14-6	✓						
EB2210677-008	13-Apr-2022 00:00	BH14-7	✓						
EB2210677-009	13-Apr-2022 00:00	BH14-8	✓						
EB2210677-010	13-Apr-2022 00:00	BH15-1		✓	✓				✓
EB2210677-011	13-Apr-2022 00:00	BH15-2		✓					✓
EB2210677-012	13-Apr-2022 00:00	BH15-3		✓			✓		
EB2210677-013	13-Apr-2022 00:00	BH15-4	✓						
EB2210677-014	13-Apr-2022 00:00	BH15-5	✓						
EB2210677-015	13-Apr-2022 00:00	BH15-6	✓						
EB2210677-016	13-Apr-2022 00:00	BH15-7	✓						
EB2210677-017	13-Apr-2022 00:00	BH15-8	✓						
EB2210677-018	13-Apr-2022 00:00	BH16-1		✓	✓			✓	
EB2210677-019	13-Apr-2022 00:00	BH16-2		✓			✓		
EB2210677-020	13-Apr-2022 00:00	BH16-3	✓						
EB2210677-021	13-Apr-2022 00:00	BH16-4		✓			✓		
EB2210677-022	13-Apr-2022 00:00	BH16-5	✓						
EB2210677-023	13-Apr-2022 00:00	BH16-6	✓						
EB2210677-024	13-Apr-2022 00:00	BH17-1		✓		✓	✓		
EB2210677-025	13-Apr-2022 00:00	BH17-2		✓	✓			✓	
EB2210677-026	13-Apr-2022 00:00	BH17-3	✓						
EB2210677-027	13-Apr-2022 00:00	BH17-4		✓			✓		
EB2210677-028	13-Apr-2022 00:00	BH17-5	✓						
EB2210677-029	13-Apr-2022 00:00	BH17-6	✓						
EB2210677-030	13-Apr-2022 00:00	BH17-7	✓						
EB2210677-031	13-Apr-2022 00:00	BH17-8	✓						
EB2210677-032	13-Apr-2022 00:00	BH18-1		✓				✓	
EB2210677-033	13-Apr-2022 00:00	BH18-2		✓		✓	✓		
EB2210677-034	13-Apr-2022 00:00	BH18-3		✓				✓	
EB2210677-035	13-Apr-2022 00:00	BH18-4		✓					



			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP068A (solids) Organochlorine Pesticides by GC/MS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-05 TRH/BTEXN/8 Metals	SOIL - S-26 8 metals/TRH/BTEXN/PAH
EB2210677-036	13-Apr-2022 00:00	BH18-5	✓						
EB2210677-037	13-Apr-2022 00:00	BH18-6	✓						
EB2210677-038	13-Apr-2022 00:00	BH18-7	✓						
EB2210677-039	13-Apr-2022 00:00	BH18-8		✓			✓		
EB2210677-040	13-Apr-2022 00:00	BH19-1		✓			✓		
EB2210677-041	13-Apr-2022 00:00	BH19-2		✓					✓
EB2210677-042	13-Apr-2022 00:00	BH19-3		✓			✓		
EB2210677-043	13-Apr-2022 00:00	BH19-4	✓						
EB2210677-044	13-Apr-2022 00:00	BH19-5		✓					✓
EB2210677-045	13-Apr-2022 00:00	BH19-6		✓			✓		
EB2210677-046	13-Apr-2022 00:00	BH19-7	✓						
EB2210677-047	13-Apr-2022 00:00	BH19-8	✓						
EB2210677-048	13-Apr-2022 00:00	BH20-1		✓	✓				
EB2210677-049	13-Apr-2022 00:00	BH20-2	✓						
EB2210677-050	13-Apr-2022 00:00	BH20-3	✓						
EB2210677-051	13-Apr-2022 00:00	BH20-4	✓						
EB2210677-052	13-Apr-2022 00:00	BH20-5		✓			✓		
EB2210677-053	13-Apr-2022 00:00	BH20-6	✓						
EB2210677-054	13-Apr-2022 00:00	BH20-7	✓						
EB2210677-055	13-Apr-2022 00:00	BH20-8	✓						
EB2210677-056	13-Apr-2022 00:00	BH21-1		✓			✓		
EB2210677-057	13-Apr-2022 00:00	BH21-2		✓		✓	✓		
EB2210677-058	13-Apr-2022 00:00	BH21-3	✓						
EB2210677-059	13-Apr-2022 00:00	BH21-4		✓			✓		
EB2210677-060	13-Apr-2022 00:00	BH21-5	✓						
EB2210677-061	13-Apr-2022 00:00	BH21-6		✓			✓		
EB2210677-062	13-Apr-2022 00:00	BH21-7	✓						
EB2210677-063	13-Apr-2022 00:00	BH21-8	✓						
EB2210677-064	13-Apr-2022 00:00	BH22-1		✓			✓		
EB2210677-065	13-Apr-2022 00:00	BH22-2		✓				✓	
EB2210677-066	13-Apr-2022 00:00	BH22-3		✓					
EB2210677-067	13-Apr-2022 00:00	BH22-4		✓		✓	✓		
EB2210677-068	13-Apr-2022 00:00	BH22-5	✓						
EB2210677-069	13-Apr-2022 00:00	BH22-6	✓						
EB2210677-070	13-Apr-2022 00:00	BH23-1		✓					
EB2210677-071	13-Apr-2022 00:00	BH23-2		✓	✓				✓
EB2210677-072	13-Apr-2022 00:00	BH23-3	✓						
EB2210677-073	13-Apr-2022 00:00	BH23-4		✓			✓		
EB2210677-074	13-Apr-2022 00:00	BH23-5	✓						
EB2210677-075	13-Apr-2022 00:00	BH23-6	✓						
EB2210677-076	13-Apr-2022 00:00	BH23-7	✓						



			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP068A (solids) Organochlorine Pesticides by GC/MS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-05 TRH/BTEXN/8 Metals	SOIL - S-26 8 metals/TRH/BTEXN/PAH
EB2210677-077	13-Apr-2022 00:00	BH23-8	✓						
EB2210677-078	13-Apr-2022 00:00	BH24-1		✓	✓		✓		
EB2210677-079	13-Apr-2022 00:00	BH24-2		✓			✓		
EB2210677-080	13-Apr-2022 00:00	BH24-3		✓				✓	
EB2210677-081	13-Apr-2022 00:00	BH24-4		✓				✓	
EB2210677-082	13-Apr-2022 00:00	BH24-5	✓						
EB2210677-083	13-Apr-2022 00:00	BH24-6	✓						
EB2210677-084	13-Apr-2022 00:00	BH24-7	✓						
EB2210677-085	13-Apr-2022 00:00	BH24-8	✓						
EB2210677-086	12-Apr-2022 00:00	QC01		✓			✓		
EB2210677-087	12-Apr-2022 00:00	QC03		✓			✓		
EB2210677-088	13-Apr-2022 00:00	QC05		✓			✓		
			SOIL - AG-1 EB Only Agricultural Soil Suite 1 EB Only	SOIL - EK055 (solids) Ammonia as N	SOIL - EK062G (Solids) Total Nitrogen as N (TKN + NOx) By Discrete	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - S-04 TRH/BTEXN	SOIL - S-18 TRH(C6-C9)/BTEXN	
EB2210677-024	13-Apr-2022 00:00	BH17-1				✓			
EB2210677-035	13-Apr-2022 00:00	BH18-4					✓		
EB2210677-048	13-Apr-2022 00:00	BH20-1				✓			
EB2210677-066	13-Apr-2022 00:00	BH22-3				✓			
EB2210677-070	13-Apr-2022 00:00	BH23-1	✓	✓	✓		✓		
EB2210677-089	12-Apr-2022 00:00	Trip Spike 7						✓	
EB2210677-090	13-Apr-2022 00:00	Trip Blank 032809						✓	
EB2210677-091	12-Apr-2022 00:00	ALS Control Spike						✓	

Matrix: **SOIL**

Laboratory sample ID Sampling date / time Sample ID

Proactive Holding Time Report

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

[illegible]

14/04/22 19:15

PO Box 2287, Fortitude Valley BC Qld 4006
(22 Corinna Street, Albion Qld 4010)
Ph: (07) 3256 2900 Fax: (07) 3256 2901

Job No:
Site:

018-150M
89 Macarthur Ave. Hamilton

Order No:
COC No.

BP202052
1

Australian Laboratory Services Pty Ltd
32 Shand Street, Stafford QLD 4053
Ph: (07) 3243 7222

Quotation Number: EN222/18 (Butler Partners)				Order No: COC No.																					
Project Manager: Suzanne Walker				Order No: COC No.																					
Sampled By: Richard Pearce				Order No: COC No.																					
Results To: Suzanne Walker (skwalker@butlerpartners.com.au) Mike Melles (mmelles@butlerpartners.com.au) Richard Pearce (rpearce@butlerpartners.com.au) Mike Melles BPeccounis@butlerpartners.com.au				Order No: COC No.																					
Relinquished by: Invoice To: Date Sample Submitted to External Lab: Due Date: Special Instructions: Fire Ant Zone?				Order No: COC No.																					
14 April 2022				Order No: COC No.																					
5 Day TAT				Order No: COC No.																					
Yes - BIP-RIFA-G003				Order No: COC No.																					
Lab Sample No.	Sample Reference	Sample Depth	Sample Type	No. of Jars/Vials	Date Sampled	6 metals	TRH / BTEXN	TRH / BTEXN / 6 Metals	TRH / BTEXN / Pb	TRH / BTEXN / PAH	TRH / BTEXN / PAH / OC / PCB / 8 Metals	PFAS Full Suite	S-12 OC / CP	S-23 PCBs	PAH EPO763 (5/10)	OC Pesticides EPO83A	S-26 TRH / BTEXN / PAH / 8 Metals	pH and EC	Exchangeable Cations, ECOC and ESP	Total N (incl TKN and Nox)	Ammonia (NH3)	Neutral (D) Leach:	Cr Suite	Cd-Cu-BTEXN	HOLD
	BH11-10	4.3-4.5	Soil	1 Jar	13-Apr-22																				
	BH12-1	0.02-0.25	Soil	1 Jar/ 1 PFAS	13-Apr-22	x																			
	BH12-2	0.3-0.5	Soil	1 Jar	13-Apr-22																				
	BH12-3	0.8-1.0	Soil	1 Jar	13-Apr-22	x																			
	BH12-4	1.3-1.5	Soil	1 Jar	13-Apr-22																				
	BH12-5	1.8-2.0	Soil	1 Jar	13-Apr-22	x																			
	BH12-6	2.3-2.5	Soil	1 Jar	13-Apr-22																				
	BH12-7	2.9-3.0	Soil	1 Jar	13-Apr-22																				
	BH12-8	3.3-3.5	Soil	1 Jar	13-Apr-22																				
	BH13-1	0.02-0.25	Soil	1 Jar	13-Apr-22			x																	
	BH13-2	0.3-0.5	Soil	1 Jar	13-Apr-22	x																			
	BH13-3	0.8-1.0	Soil	1 Jar	13-Apr-22																				
	BH13-4	1.3-1.5	Soil	1 Jar	13-Apr-22																				
	BH13-5	1.8-2.0	Soil	1 Jar	13-Apr-22	x																			
	BH13-6	2.3-2.5	Soil	1 Jar	13-Apr-22																				
	BH13-7	2.8-3.0	Soil	1 Jar	13-Apr-22																				
1	BH13-8	3.3-3.5	Soil	1 Jar	13-Apr-22																				
2	BH14-1	0.02-0.25	Soil	1 Jar/ 1 PFAS	13-Apr-22												x								
3	BH14-2	0.3-0.5	Soil	1 Jar	13-Apr-22	x																			
4	BH14-3	0.8-1.0	Soil	1 Jar	13-Apr-22													x							
5	BH14-4	1.3-1.5	Soil	1 Jar	13-Apr-22	x																			

Environmental Division
Brisbane
Work Order Reference
EB2210677



Telephone : + 61-7-3243 7222

PO Box 2267, Fortitude Valley BC Qld 4006
 (22 Corinna Street, Albion Qld 4010)
 Ph: (07) 3256 2900 Fax: (07) 3256 2901

Job No:
 Site:

018-150M
 89 Macarthur Ave, Hamilton

Order No:
 COC No.

BP202052

1

Australian Laboratory Services Pty Ltd
 32 Strand Street, Stafford QLD 4053
 Ph: (07) 3243 7222

Quotation Number: ENV2222/18 (Butler Partners)

Project Manager:

Suzanne Walker

Sampled By:

Richard Pearce

Results To:

Suzanne Walker (stwalker@butlerpartners.com.au)

Mike Melles (mmelles@butlerpartners.com.au)

Richard Pearce (rpearce@butlerpartners.com.au)

Mike Melles

BPaccounts@butlerpartners.com.au

14 April 2022

Relinquished by:

BPaccounts@butlerpartners.com.au

14 April 2022

Invoice To:

BPaccounts@butlerpartners.com.au

14 April 2022

Data Sample Submitted to External Lab:

BPaccounts@butlerpartners.com.au

14 April 2022

Due Date:

5 Day TAT

Special Instructions:

Yes - BIP-RIFA-G003

Fire Ant Zone?

Lab Sample No.	Sample Reference	Sample Depths	Sample Type	No. of Jars/Vials	Date Sampled	8 metals	S-4	S-5	S-6	S-7	S-8	PFAS Full Suite	S-12 OC / OP	S-23 PCBs	PAH (BPT63)	OC Pesticides	S-26	pH and EC	Exchangeable Cations, ECEC and ESP	Total N (incl TKN and Nox)	Ammonia (NH3)	Neutral (D) Leachr	Cr Suite	W-18 Cg-C10 BTXN	HOLD
6	BH14-5	1.8-2.0	Soil	1 Jar	13-Apr-22																				
7	BH14-6	2.3-2.5	Soil	1 Jar	13-Apr-22																				
8	BH14-7	2.8-3.0	Soil	1 Jar	13-Apr-22																				
9	BH14-8	3.3-3.5	Soil	1 Jar	13-Apr-22																				
10	BH15-1	0.0-2.0-3	Soil	1 Jar/ 1 PFAS	13-Apr-22																				
11	BH15-2	0.4-0.5	Soil	1 Jar	13-Apr-22																				
12	BH15-3	0.6-1.0	Soil	1 Jar	13-Apr-22																				
13	BH15-4	1.3-1.5	Soil	1 Jar	13-Apr-22																				
14	BH15-5	1.8-2.0	Soil	1 Jar	13-Apr-22																				
15	BH15-6	2.3-2.5	Soil	1 Jar	13-Apr-22																				
16	BH15-7	2.8-3.0	Soil	1 Jar	13-Apr-22																				
17	BH15-8	3.3-3.5	Soil	1 Jar	13-Apr-22																				
18	BH16-1	0.02-0.25	Soil	1 Jar	13-Apr-22																				
19	BH16-2	0.3-0.5	Soil	1 Jar	13-Apr-22																				
20	BH16-3	0.8-1.0	Soil	1 Jar	13-Apr-22																				
21	BH16-4	1.3-1.5	Soil	1 Jar	13-Apr-22																				
22	BH16-5	1.8-2.0	Soil	1 Jar	13-Apr-22																				
23	BH16-6	2.3-2.5	Soil	1 Jar	13-Apr-22																				
24	BH17-1	0.02-0.25	Soil	1 Jar/ 1 PFAS	13-Apr-22																				
25	BH17-2	0.3-0.5	Soil	1 Jar	13-Apr-22																				
26	BH17-3	0.8-1.0	Soil	1 Jar	13-Apr-22																				

PO Box 2267, Fortitude Valley BC Qld 4006
(22 Corunna Street, Albion Qld 4010)
Ph: (07) 3256 2900 Fax: (07) 3256 2901

Job No: 018-150M
Site: 89 Macarthur Ave, Hamilton

Order No: BP202052
COC No. 1

Australian Laboratory Services Pty Ltd
32 Strand Street, Stafford QLD 4053
Ph: (07) 3243 7222

Quotation Number: EN222/18 (Butler Partners)

Project Manager:

Suzanne Walker

Sampled By:

Richard Pearce

Results To:

Suzanne Walker (skwalker@butlerpartners.com.au)

Mike Mellis (mmellis@butlerpartners.com.au)

Richard Pearce (rpearce@butlerpartners.com.au)

Mike Mellis

BPaccounts@butlerpartners.com.au

14 April 2022

Relinquished by:

5 Day TAT

Invoice To:

Yes - BIP-RIFA-G003

Date Sample Submitted to External Lab:

Special Instructions:

Fire Ant Zone?

Quotation Number: EN/222/18 (Butler Partners)																																			
Project Manager: Suzanne Walker																																			
Sampled By: Richard Pearce																																			
Results To: Suzanne Walker (skwalker@butlerpartners.com.au)																																			
Relinquished by: Mike Melles (mmelles@butlerpartners.com.au)																																			
Invoice To: Richard Pearce (rpearce@butlerpartners.com.au)																																			
Date Sample Submitted to External Lab: Mike Melles																																			
Due Date: 5 Day TAT																																			
Special Instructions: Fire Ant Zone?																																			
Yes – BIP-RIFA-G003																																			
Lab Sample No.	Sample Reference	Sample Depths	Sample Type	No. of Jars/Visits	Date Sampled	8 metals	S-4	TRH / BTEXN	S-5	TRH / BTEXN / 8 Metals	S-6	TRH / BTEXN / Pb	S-7	TRH / BTEXN / PAH	S-8	TRH / BTEXN / PAH / OC / PCB / 8 Metals	PFAS Full Suite	S-12	OC / OP	S-23	PCBs	EPA758 PAH (g/m)	EPA826A OC Pesticides	S-26	TRH / BTEXN / PAH / 8 Metals	pH and EC	Exchangeable Cations, ECEC and ESP	Total N (incl. TKN and Nox)	Ammonia (NH3)	Neutral (Cl) Leach:	Cr Suite	W-18	C ₆ -C ₁₀ /BTEXN	HOLD	
27	BH17-4	1.3-1.5	Soil	1 Jar	13-Apr-22	x																													
28	BH17-5	1.8-2.0	Soil	1 Jar	13-Apr-22																														
29	BH17-6	2.3-2.5	Soil	1 Jar	13-Apr-22																														
30	BH17-7	2.8-3.0	Soil	1 Jar	13-Apr-22																														
31	BH17-8	3.3-3.5	Soil	1 Jar	13-Apr-22																														
32	BH18-1	0.02-0.25	Soil	1 Jar	13-Apr-22				x																										
33	BH18-2	0.3-0.5	Soil	1 Jar	13-Apr-22	x																													
34	BH18-3	0.8-1.0	Soil	1 Jar/ 1 PFAS	13-Apr-22				x																										
35	BH18-4	1.3-1.5	Soil	1 Jar	13-Apr-22		x																												
36	BH18-5	1.8-2.0	Soil	1 Jar	13-Apr-22																														
37	BH18-6	2.3-2.5	Soil	1 Jar	13-Apr-22																														
38	BH18-7	2.8-3.0	Soil	1 Jar	13-Apr-22																														
39	BH18-8	3.3-3.5	Soil	1 Jar	13-Apr-22	x																													
40	BH19-1	0.02-0.25	Soil	1 Jar	13-Apr-22	x																													
41	BH19-2	0.3-0.5	Soil	1 Jar/ 1 PFAS	13-Apr-22																					x									
42	BH19-3	0.8-1.0	Soil	1 Jar	13-Apr-22	x																													
43	BH19-4	1.3-1.5	Soil	1 Jar	13-Apr-22																														
44	BH19-5	1.8-2.0	Soil	1 Jar	13-Apr-22																					x									
45	BH19-6	2.3-2.5	Soil	1 Jar	13-Apr-22	x																													
46	BH19-7	2.8-3.0	Soil	1 Jar	13-Apr-22																														
47	BH19-8	3.3-3.5	Soil	1 Jar	13-Apr-22																														

PO Box 2287, Fortitude Valley BC Qld 4006
 22 Corunna Street, Albion Qld 4010
 Ph: (07) 3256 2900 Fax: (07) 3256 2901

Job No: 018-150M
 Site: 89 Macarthur Ave, Hamilton

Order No:
 COC No.

BP202052
 1

Australian Laboratory Services Pty Ltd
 32 Shand Street, Stafford QLD 4053
 Ph: (07) 3243 7222

Quotation Number: ENV222/18 (Butler Partners)
 Project Manager: Suzanne Walker
 Sampled By: Richard Pearce
 Results To: Suzanne Walker (skwalker@butlerpartners.com.au)
 Mike Melles (mmelles@butlerpartners.com.au)
 Richard Pearce (rpearce@butlerpartners.com.au)
 Relinquished by: Mike Melles
 Invoice To: BPaccounts@butlerpartners.com.au
 Date Sample Submitted to External Lab: 14 April 2022
 Due Date: 5 Day TAT
 Special Instructions:
 Fire Ant Zone? Yes - BIP-RIFA-G003

Lab Sample No.	Sample Reference	Sample Depths	Sample Type	No. of Jars/Vials	Date Sampled	8 Metals	S-1	S-5	S-6	S-7	S-8	S-12	S-23	PAH	OC Pesticides	S-26	pH and EC	Exchangeable Cations, ECCEC and ESP	Total N (incl TKN and Nox)	Ammonia (NH3)	Neutral (Cl) Leach	Cr Sulfate	W-18	Hold
15	BH20-1	0.02-0.25	Soil	1 Jar/ 1 PFAS	13-Apr-22																			
19	BH20-2	0.3-0.5	Soil	1 Jar	13-Apr-22																			
50	BH20-3	0.6-1.0	Soil	1 Jar	13-Apr-22																			
51	BH20-4	1.3-1.5	Soil	1 Jar	13-Apr-22																			
52	BH20-5	1.8-2.0	Soil	1 Jar	13-Apr-22																			
53	BH20-6	2.3-2.5	Soil	1 Jar	13-Apr-22																			
54	BH20-7	2.8-3.0	Soil	1 Jar	13-Apr-22																			
55	BH20-8	3.3-3.5	Soil	1 Jar	13-Apr-22																			
56	BH21-1	0.1-0.3	Soil	1 Jar	13-Apr-22																			
57	BH21-2	0.3-0.5	Soil	1 Jar/ 1 PFAS	13-Apr-22																			
58	BH21-3	0.8-1.0	Soil	1 Jar	13-Apr-22																			
59	BH21-4	1.3-1.5	Soil	1 Jar	13-Apr-22																			
60	BH21-5	1.8-2.0	Soil	1 Jar	13-Apr-22																			
61	BH21-6	2.3-2.5	Soil	1 Jar	13-Apr-22																			
62	BH21-7	2.8-3.0	Soil	1 Jar	13-Apr-22																			
63	BH21-8	3.3-3.5	Soil	1 Jar	13-Apr-22																			
64	BH22-1	0.02-0.25	Soil	1 Jar	13-Apr-22																			
65	BH22-2	0.4-0.5	Soil	1 Jar	13-Apr-22																			
66	BH22-3	0.8-1.0	Soil	1 Jar	13-Apr-22																			
67	BH22-4	1.3-1.5	Soil	1 Jar	13-Apr-22																			
68	BH22-5	1.8-2.0	Soil	1 Jar	13-Apr-22																			

PO Box 2267, Fortitude Valley BC Qld 4006
 72 Corinna Street, Albion Qld 4010
 Ph: (07) 3256 2900 Fax: (07) 3256 2901

Australian Laboratory Services Pty Ltd
 32 Shand Street, Stafford QLD 4053
 Ph: (07) 3243 7222

Job No: 018-150M
 Site: 89 Macarthur Ave, Hamilton

Order No: BP202052
 COC No. 1

Quotation Number:

EN222/18 (Butler Partners)

Project Manager:

Suzanne Walker

Sampled By:

Richard Pearce

Results To:

Suzanne Walker (skwalker@butlerpartners.com.au)

Mike Welles (mmwelles@butlerpartners.com.au)

Richard Pearce (rpearce@butlerpartners.com.au)

Mike Welles

BPaacounts@butlerpartners.com.au

14 April 2022

Relinquished by:

8 Day TAT

Invoice To:

Yes - BIP-RIFA-G003

Date Sample Submitted to External Lab:

Due Date:

Special Instructions:

Fire Ant Zone?

Lab Sample No.	Sample Reference	Sample Depths	Sample Type	No. of Jars/Vials	Date Sampled	8 metals	TRH / BTEXN	TRH / BTEXN / 8 Metals	TRH / BTEXN / Pb	TRH / BTEXN / PAH	TRH / BTEXN / PAH / OC / PCB / 8 Metals	PFAS Full Suite	OC / OP	PCBs	PAH (SM)	OC Pesticides	TRH / BTEXN / PAH / 8 Metals	pH and EC	Exchangeable Cations, ECOC and ESP	Total N (incl TKN and Nox)	Ammonia (NH3)	Neutral (D) Leach	Cr Suite	C ₆ -C ₁₀ /BTEXN	HOLD
69	BH22-6	2.3-2.5	Soil	1 Jar	13-Apr-22																				
70	BH23-1	0.02-0.25	Soil	1 Jar	13-Apr-22		X												X						X
71	BH23-2	0.3-0.5	Soil	1 Jar	13-Apr-22												X	X							
72	BH23-3	0.8-1.0	Soil	1 Jar	13-Apr-22																				X
73	BH23-4	1.3-1.5	Soil	1 Jar	13-Apr-22																				
74	BH23-5	1.8-2.0	Soil	1 Jar	13-Apr-22																				X
75	BH23-6	2.3-2.5	Soil	1 Jar	13-Apr-22																				X
76	BH23-7	2.8-3.0	Soil	1 Jar	13-Apr-22																				X
77	BH23-8	3.3-3.5	Soil	1 Jar	13-Apr-22																				X
78	BH24-1	0.14-0.3	Soil	1 Jar	13-Apr-22												X								
79	BH24-2	0.4-0.5	Soil	1 Jar	13-Apr-22																				X
80	BH24-3	0.8-1.0	Soil	1 Jar	13-Apr-22																				X
81	BH24-4	1.3-1.5	Soil	1 Jar	13-Apr-22																				X
82	BH24-5	1.8-2.0	Soil	1 Jar	13-Apr-22																				
83	BH24-6	2.3-2.5	Soil	1 Jar	13-Apr-22																				
84	BH24-7	2.8-3.0	Soil	1 Jar	13-Apr-22																				
85	BH24-8	3.3-3.5	Soil	1 Jar	13-Apr-22																				
86	QC01	-	Soil	1 Jar	12-Apr-22																				
87	QC03	-	Soil	1 Jar	12-Apr-22																				
88	QC05	-	Soil	1 Jar	13-Apr-22																				
89	Trip Spike 7	-	Soil	1 Jar	12-Apr-22																				X

Australian Laboratory Services Pty Ltd
32 Shand Street, Stafford QLD 4053
Ph: (07) 3243 7222

Order No: BP202052

COC No. 1

EN/222/18 (Butler Partners)

Suzanne Walker

Richard Pearce

Suzanne Walker (skwalker@butlerpartners.com.au)

Richard Pearce (rpearce@butlerpartners.com.au)

BPaccounts@butlerpartners.com.au

14 April 2022

5 Day TAT

Yes - BIP-RIFA-G003

018-150M - COC01 - ALS - 14Apr22... - Version 24 - 7 May 2021



Environmental

CERTIFICATE OF ANALYSIS

Work Order : **EB2210672**

Client : **BUTLER PARTNERS PTY LTD**
Contact : **MS SUZANNE WALKER**
Address : **22 CORUNNA STREET**
ALBION QLD, AUSTRALIA 4010
Telephone : **+61 07 3852 3800**
Project : **018-150M**
Order number : **BP202054**
C-O-C number : **----**
Sampler : **RICHARD PEARCE**
Site : **89 Macathur Ave, Hamilton**
Quote number : **EN/222 (Planned event Tables)**
No. of samples received : **61**
No. of samples analysed : **25**

Page : 1 of 20

Laboratory : Environmental Division Brisbane
Contact : Kimberly Hilton-Barber
Address : 2 Byth Street Stafford QLD Australia 4053
Telephone : +61-7-3243 7222
Date Samples Received : 20-Apr-2022 15:50
Date Analysis Commenced : 22-Apr-2022
Issue Date : 06-May-2022 11:46



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
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Timothy Creagh	2IC Organic Chemist	Brisbane Organics, Stafford, QLD



Page : 2 of 20
Work Order : EB2210972
Client : BUTLER PARTNERS PTY LTD
Project : 018-150M

General Comments

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

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- ALS is not NATA accredited for the analysis of Exchangeable Aluminium and Exchange Acidity in soils when performed under ALS Method ED005.
- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- 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(k)fluoranthene (1.0), Benzo(a)pyrene (0.1), 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.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above 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.
- EK061G (TKN as N) / EK067G (Total Phosphorus): Sample EB2210664_002 Shows poor matrix spike recovery due to sample heterogeneity. Confirmed by visual inspection.
- ED006-Exchangeable Cations: Unable to calculate Calcium/Magnesium Ratio for sample BH29-1' (EB2210972-034) as required Calcium & Magnesium results are less than the limit of reporting.
- ED006-Exchangeable Cations: Unable to calculate Magnesium/Potassium Ratio for some samples as required Exchangeable Magnesium and/or Potassium results are less than the limit of reporting.
- ED008-Exchangeable Cations with pre-treatment: Unable to calculate Magnesium/Potassium Ratio for sample 'BH31-1' (EB2210972-048) as required Exchangeable Magnesium and/or Potassium results are less than the limit of reporting.
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H⁺ + Al³⁺).
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3			Sample ID		BK10@		BK2z@		BK2z@		BK2z@	
Compound	Sampling date / time		CAS Number	LOR	Unit	BK10@		BK2z@		BK2z@		Result
						14-Apr-2022 00:00		14-Apr-2022 00:00		14-Apr-2022 00:00		
EA0zz:) oisture Content -Dried 5 10z@10M@3												
) oisture Content	----			0.1	%			H°				
) oisture Content	----			1.0	%	1z.1		1H.1		(.2		Hz
E9 00z-ED064T: Total) etals by ICP@ES												
Arsenic	7440-38-2	5	mg/kg	<5	z					°		<5
Cadmium	7440-43-9	1	mg/kg	<1	<1					<1		<1
Chromium	7440-47-3	2	mg/kg	12	12					17		10
Copper	7440-50-8	5	mg/kg	1H	1H					24		10
Lead	7439-92-1	5	mg/kg	1(	1°					12H		4H
Nickel	7440-02-0	2	mg/kg	6	10					12		6
8inc	7440-66-6	5	mg/kg	z0	H7					124		z4
E9 04zT: Total Recoverable) ercury by FI) S												
) ercury	7439-97-6	0.1	mg/kg	0.1	0.1			0.°				0.2
EP0° (A: Organochlorine Pesticides -OC3												
alpha@KC	319-84-6	0.05	mg/kg	<0.05				<0.05				
Ke@chlorobenZene -KCB3	118-74-1	0.05	mg/kg	<0.05				<0.05				
beta@KC	319-85-7	0.05	mg/kg	<0.05				<0.05				
gamma@KC	58-89-9	0.05	mg/kg	<0.05				<0.05				
delta@KC	319-86-8	0.05	mg/kg	<0.05				<0.05				
Keptachlor	76-44-8	0.05	mg/kg	<0.05				<0.05				
Aldrin	309-00-2	0.05	mg/kg	<0.05				<0.05				
Keptachlor epo@de	1024-57-3	0.05	mg/kg	<0.05				<0.05				
^ Total Chlordane -sum3	----	0.05	mg/kg	<0.05				<0.05				
trans@hlordane	5103-74-2	0.05	mg/kg	<0.05				<0.05				
alpha@ndosulfan	959-98-8	0.05	mg/kg	<0.05				<0.05				
cis@hlordane	5103-71-9	0.05	mg/kg	<0.05				<0.05				
Dieldrin	60-57-1	0.05	mg/kg	<0.05				<0.05				
HH@DE	72-55-9	0.05	mg/kg	<0.05				<0.05				
Endrin	72-20-8	0.05	mg/kg	<0.05				<0.05				
beta@ndosulfan	33213-65-9	0.05	mg/kg	<0.05				<0.05				
^ Endosulfan -sum3	115-29-7	0.05	mg/kg	<0.05				<0.05				
HH@DD	72-54-8	0.05	mg/kg	<0.05				<0.05				
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05				<0.05				
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05				<0.05				
HH@DT	50-29-3	0.2	mg/kg	<0.2				<0.2				



Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		BK10@	BK10@	BK2z@	BK2z@	BK2z@
Compound	CAS Number	LOR	Sampling date / time	Unit	14-Apr-2022 00:00 EB2210672@01	14-Apr-2022 00:00 EB2210672@02	14-Apr-2022 00:00 EB2210672@07	14-Apr-2022 00:00 EB2210672@10
					Result	Result	Result	Result
EP0° (A: Organochlorine Pesticides -OC3@Continued								
Endrin ketone	53494-70-5	0.05		mg/kg	<0.05		<0.05	
) ethoGychlor	72-43-5	0.2		mg/kg	<0.2		<0.2	
^ Sum of Aldrin ` Dieldrin	309-00-2/60-57-1	0.05		mg/kg	<0.05		<0.05	
^ Sum of DDD ` DDE ` DDT	72-54-8/72-55-9/5	0.05		mg/kg	<0.05		<0.05	
		0-2						
EP07z-SI) B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5		mg/kg		<0.5		<0.5
Acenaphthylene	208-96-8	0.5		mg/kg		<0.5		<0.5
Acenaphthene	83-32-9	0.5		mg/kg		<0.5		<0.5
Fluorene	86-73-7	0.5		mg/kg		<0.5		<0.5
Phenanthrene	85-01-8	0.5		mg/kg		<0.5		<0.5
Anthracene	120-12-7	0.5		mg/kg		<0.5		<0.5
Fluoranthene	206-44-0	0.5		mg/kg		<0.5		<0.5
Pyrene	129-00-0	0.5		mg/kg		<0.5		<0.5
BenZ-a-anthracene	56-55-3	0.5		mg/kg		<0.5		<0.5
Chrysene	218-01-9	0.5		mg/kg		<0.5		<0.5
BenZo-b`-fluoranthene	205-99-2	0.5		mg/kg		<0.5		<0.5
BenZo-k-fluoranthene	207-08-9	0.5		mg/kg		<0.5		<0.5
BenZo-a-pyrene	50-32-8	0.5		mg/kg		<0.5		<0.5
Indeno-1,2,3-cd-pyrene	193-39-5	0.5		mg/kg		<0.5		<0.5
DibenZ-a,h-anthracene	53-70-3	0.5		mg/kg		<0.5		<0.5
BenZo-g,h,i,perylene	191-24-2	0.5		mg/kg		<0.5		<0.5
^ Sum of polycyclic aromatic hydrocarbons		----						
^ BenZo-a-pyrene TEQ -Zero3		----						
^ BenZo-a-pyrene TEQ -half LOR3		----						
^ BenZo-a-pyrene TEQ -LOR3		----						
		0.5		mg/kg		1.2		1.2
EP0(0/071: Total Petroleum Hydrocarbons								
C° @6 Fraction	----	10		mg/kg				<10
C10 @-1HFraction	----	50		mg/kg				<50
C1z @-2I Fraction	----	100		mg/kg				<100
C26 @-4° Fraction	----	100		mg/kg				<100
^ C10 @-4° Fraction -sum3	----	50		mg/kg				<50
EP0(0/071: Total Recoverable Hydrocarbons @NEP) 2014 Fractions								
C° @-10 Fraction	C6_C10	10		mg/kg				<10



Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		BK10@	BK10@	BK2z@	BK2z@	BK2z@
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result
EP0(0/071: Total Recoverable Hydrocarbons @NEP) 2014 Fractions @continued								
^ C° @-10 Fraction minus BTEj		C6_C10-BTEX	10	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10
-F13					Result	Result	Result	Result
XC10 @-1° Fraction			50	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10
XC1° @-4HFraction			100	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10
XC4H @-H0 Fraction			100	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10
^ XC10 @-H0 Fraction -sum3			50	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10
^ XC10 @-1° Fraction minus Naphthalene			50	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10
-F23					Result	Result	Result	Result
EP0(0: BTEj N								
BenZene	71-43-2	0.2	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
Toluene	108-88-3	0.5	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
EthylbenZene	100-41-4	0.5	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
meta@ para@ylene	108-38-3 106-42-3	0.5	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
ortho@ylene	95-47-6	0.5	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
^ Sum of BTEj		0.2	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
^ Total j ylenes		0.5	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
Naphthalene	91-20-3	1	mg/kg	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
EP0° (S: Organochlorine Pesticide Surrogate								
Dibromo@DE	21655-73-2	0.05	%	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
EP0° (T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
EP07z-SI) S: Phenolic Compound Surrogates								
Phenol@°	13127-88-3	0.5	%	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
2@Hlorophenol@H	93951-73-6	0.5	%	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
2.H° @ribromophenol	118-79-6	0.5	%	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
EP07z-SI) 3T: PAK Surrogates								
2@uorobiphenyl	321-60-8	0.5	%	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
Anthracene@10	1719-06-8	0.5	%	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
H@erphenyl@1H	1718-51-0	0.5	%	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
EP0(0S: TPK-S&3BTEj Surrogates								
1.2@ichloroethane@H	17060-07-0	0.2	%	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
Toluene@	2037-26-5	0.2	%	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10
H@romo fluorobenZene	460-00-4	0.2	%	EB2210672@01	EB2210672@02	EB2210672@07	EB2210672@10	EB2210672@10



Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID			QC06	BK2°@	BK27°@	BK27°@	
Compound	CAS Number	Sampling date / time		14-Apr-2022 00:00	14-Apr-2022 00:00	14-Apr-2022 00:00	14-Apr-2022 00:00		
		LOR	Unit	EB2210672@11	EB2210672@1H	EB2210672@1z	EB2210672@21		
				Result	Result	Result	Result		
EA0zz:) oisture Content -Dried 5 10z@10M3									
) oisture Content				---	%	H.0	10.(	6.6	14.0
E9 00z-ED0643T: Total) etals by ICP@ES									
Arsenic	7440-38-2	5	mg/kg	<5	<5	°	<5	<5	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	
Chromium	7440-47-3	2	mg/kg	11	1H	((	z	(	
Copper	7440-50-8	5	mg/kg	z	14	24	7	7	
Lead	7439-92-1	5	mg/kg	21	°	z	°	7	
Nickel	7440-02-0	2	mg/kg	(	1°	76	<2	H	
8inc	7440-66-6	5	mg/kg	42	H2	H7	H2	7	
E9 04zT: Total Recoverable) ercury by FI) S									
) ercury				7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1
EP07z-SI) 3B: Polynuclear Aromatic Kydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
Acenaphthylene	208-96-8	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
Acenaphthene	83-32-9	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
Fluorene	86-73-7	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
Phenanthrene	85-01-8	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
Anthracene	120-12-7	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
Fluoranthene	206-44-0	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
Pyrene	129-00-0	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
BenZ-a-anthracene	56-55-3	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
Chrysene	218-01-9	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
BenZo-b'-a-fluoranthene	205-99-2	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
BenZo-k-fluoranthene	207-08-9	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
BenZo-a-pyrene	50-32-8	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
Indeno-1,2,4.cd3pyrene	193-39-5	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
DibenZ-a.h-anthracene	53-70-3	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
BenZo-g.h.i3perylene	191-24-2	0.5	mg/kg	0002	0002	<0.5	<0.5	0002	
^ Sum of polycyclic aromatic hydrocarbons				0.5	mg/kg	0002	<0.5	0002	
^ BenZo-a3pyrene TEQ -Zero3				0.5	mg/kg	0002	<0.5	0002	
^ BenZo-a3pyrene TEQ -half LOR3				0.5	mg/kg	0002	<0.5	0002	
^ BenZo-a3pyrene TEQ -LOR3				0.5	mg/kg	0002	0.°	0002	
				0.5	mg/kg	0002	1.2	0002	
EP0(0/071: Total Petroleum Kydrocarbons									
C° @6 Fraction				10	mg/kg	0002	<10	0002	

Sub-Matrix: SOIL
-Matrix: SOIL3

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		QC06	BK2°@	BK27°@	BK27°@
Compound	CAS Number	LOR	Sampling date / time	14-Apr-2022 00:00	14-Apr-2022 00:00	14-Apr-2022 00:00	14-Apr-2022 00:00
	Unit			EB2210672@11	EB2210672@1H	EB2210672@1z	EB2210672@24
				Result	Result	Result	Result
EP0(0/071: Total Petroleum Hydrocarbons @continued							
C10 @-1H	Fraction	50	mg/kg			<50	
C1z @-2(	Fraction	100	mg/kg			<100	
C26 @-4°	Fraction	100	mg/kg			<100	
^ C10 @-4°	Fraction -sum3	50	mg/kg			<50	
EP0(0/071: Total Recoverable Hydrocarbons @NEP) 2014 Fractions							
C° @-10	Fraction	10	mg/kg			<10	
^ C° @-10	Fraction minus BTEJ	10	mg/kg			<10	
-F13							
XC10 @-1°	Fraction	50	mg/kg			<50	
XC1° @-4H	Fraction	100	mg/kg			<100	
XC4H @-H0	Fraction	100	mg/kg			<100	
^ XC10 @-H0	Fraction -sum3	50	mg/kg			<50	
^ XC10 @-1°	Fraction minus Naphthalene	50	mg/kg			<50	
-F23							
EP0(0: BTEJ N							
Benzene	71-43-2	0.2	mg/kg			<0.2	
Toluene	108-88-3	0.5	mg/kg			<0.5	
Ethylbenzene	100-41-4	0.5	mg/kg			<0.5	
meta@ para@ylene	108-38-3 106-42-3	0.5	mg/kg			<0.5	
ortho@ylene	95-47-6	0.5	mg/kg			<0.5	
^ Sum of BTEj		0.2	mg/kg			<0.2	
^ Total j ylenes		0.5	mg/kg			<0.5	
Naphthalene	91-20-3	1	mg/kg			<1	
EP241A: Perfluoroalkyl Sulfonic Acids							
Perfluorobutane sulfonic acid	375-73-5	0.0002	mg/kg		<0.0002		
-PFBS3							
Perfluoropentane sulfonic acid	2706-91-4	0.0002	mg/kg		<0.0002		
-PFPeS3							
Perfluorohexane sulfonic acid	355-46-4	0.0002	mg/kg		<0.0002		
-PFKCS3							
Perfluoroheptane sulfonic acid	375-92-8	0.0002	mg/kg		<0.0002		
-PFKpS3							
Perfluorooctane sulfonic acid	1763-23-1	0.0002	mg/kg		0.0002		
-PFOS3							

Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		QC06	BK2°@	BK27°@	BK27°@
Compound	CAS Number	LOR	Sampling date / time	14-Apr-2022 00:00	14-Apr-2022 00:00	14-Apr-2022 00:00	14-Apr-2022 00:00
				EB2210672@11	EB2210672@1H	EB2210672@1z	EB2210672@21
				Result	Result	Result	Result
EP241A: Perfluoroalkyl Sulfonic Acids @continued							
Perfluorodecane sulfonic acid -PFDS3	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
EP241B: Perfluoroalkyl Carboxylic Acids							
Perfluorobutanoic acid -PFBA3	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid -PFPeA3	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid -PFHxA3	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid -PFHpA3	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid -PFOA3	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid -PFNA3	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid -PFDA3	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid -PFUnDA3	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid -PFDoDA3	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid -PFTriDA3	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid -PFTeDA3	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005
EP241C: Perfluoroalkyl Sulfonamides							
Perfluorooctane sulfonamide -FOSA3	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
N-ethyl perfluorooctane sulfonamide -) eFOSA3	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005
N-methyl perfluorooctane sulfonamide -EtFOSA3	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005
N-ethyl perfluorooctane sulfonamidoethanol -) eFOSE3	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005
N-methyl perfluorooctane sulfonamidoethanol -EtFOSE3	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005
N-ethyl perfluorooctane sulfonamidoacetic acid -) eFOSAA3	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
N-methyl perfluorooctane sulfonamidoacetic acid -EtFOSAA3	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002
EP241D: -n:23Fluorotelomer Sulfonic Acids							



Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		QC06		BK2' @		BK27 @		BK27 @	
Compound	CAS Number	LOR	Sampling date / time	Unit	EB2210672@11	EB2210672@1H	EB2210672@1z	EB2210672@21	EB2210672@24	Result	Result
EP241D: -n:23Fluorotelomer Sulfonic Acids @Continued											
H:2 Fluorotelomer sulfonic acid -H2 FTS3	757124-72-4	0.0005		mg/kg		<0.0005					
°:2 Fluorotelomer sulfonic acid -°:2 FTS3	27619-97-2	0.0005		mg/kg		<0.0005					
(:2 Fluorotelomer sulfonic acid -(:2 FTS3	39108-34-4	0.0005		mg/kg		<0.0005					
10:2 Fluorotelomer sulfonic acid -10:2 FTS3	120226-60-0	0.0005		mg/kg		<0.0005					
EP241P: PFAS Sums											
Sum of PFAS	----	0.0002		mg/kg		0.0002					
Sum of PFKGS and PFOS	355-46-4/1763-23-1	0.0002		mg/kg		0.0002					
Sum of PFAS -WA DER List3	----	0.0002		mg/kg		0.0002					
EP07z-SI) \$S: Phenolic Compound Surrogates											
Phenol@°	13127-88-3	0.5		%			111	11z			
2@hlorophenol@H	93951-73-6	0.5		%			10H	10°			
2.H° @ribromophenol	118-79-6	0.5		%			10z	11(			
EP07z-SI) \$T: PAK Surrogates											
2@luorobiphenyl	321-60-8	0.5		%			66.1	6(.4			
Anthracene@10	1719-06-8	0.5		%			112	11°			
H@erphenyl@1H	1718-51-0	0.5		%			6(.6	102			
EP0(OS: TPK-&3BTEJ Surrogates											
1.2@ichloroethane@H	17060-07-0	0.2		%				76.z			
Toluene@()	2037-26-5	0.2		%				60.0			
H@romofluorobenZene	460-00-4	0.2		%				6(.2			
EP241S: PFAS Surrogate											
14CH@FOS	-----	0.0002		%		10(					
14C(@FOA	-----	0.0002		%		101					

Analytical Results

Sub-Matrix: SOIL
-Matrix: SOIL3

Sub-Matrix: SOIL		Sample ID		QC11		BK27@		BK2(@		BK26@	
-Matrix: SOIL3		Sampling date / time		14-Apr-2022 00:00		14-Apr-2022 00:00		14-Apr-2022 00:00		14-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	Result	EB2210672@2H	EB2210672@2z	EB2210672@2(	EB2210672@40	EB2210672@4H	Result	Result
EA002: pK 1:z -Soils3											
pK &alue	-----	0.1	pH Unit	-----	-----	-----	-----	-----	-----	-----	(.7
EA010: Conductivity -1:z3											
Electrical Conductivity 5 2zMC	-----	1	µS/cm	-----	-----	-----	-----	-----	-----	-----	1(6
EA0zz:) oisture Content											
) oisture Content	-----	1.0	%	-----	-----	-----	7.4	-----	-----	-----	-----
EA0zz:) oisture Content -Dried 5 10z@10MC3											
) oisture Content	-----	1.0	%	-----	1° 2	° 2	-----	(z	-----	-----	7.H
ED00° : EGchangeable Cations on Alkaline Soils											
ø EGchangeable Calcium	-----	0.2	meq/100g	-----	-----	-----	-----	-----	-----	-----	0.H
ø EGchangeable) agnesium	-----	0.2	meq/100g	-----	-----	-----	-----	-----	-----	-----	<0.2
ø EGchangeable Potassium	-----	0.2	meq/100g	-----	-----	-----	-----	-----	-----	-----	<0.2
ø EGchangeable Sodium	-----	0.2	meq/100g	-----	-----	-----	-----	-----	-----	-----	0.7
ø Cation EGchange Capacity	-----	0.2	meq/100g	-----	-----	-----	-----	-----	-----	-----	1.1
ø EGchangeable Sodium Percent	-----	0.2	%	-----	-----	-----	-----	-----	-----	-----	° 4.2
E9 00z-ED0643T: Total) etals by ICP@ES											
Arsenic	7440-38-2	5	mg/kg	7	<5	<5	7	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	° 6	11	°	z	z	(	z	°
Copper	7440-50-8	5	mg/kg	27	<5	<5	z	z	<5	<5	<5
Lead	7439-92-1	5	mg/kg	7	<5	<5	11	22	4	H	1°
Nickel	7440-02-0	2	mg/kg	4(	10	4	4	4	4	4	1°
8inc	7440-66-6	5	mg/kg	H0	1°	2H	44	44	44	44	1°
E9 04zT: Total Recoverable) ercury by FI) S											
) ercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
EV0zz: Ammonia as N											
Ammonia as N	7664-41-7	20	mg/kg	-----	-----	-----	-----	-----	-----	-----	<20
EV0z69 : Nitrite plus Nitrate as N -NO& by Discrete Analyser											
Nitrite ` Nitrate as N -Sol.3	-----	0.1	mg/kg	-----	-----	-----	-----	-----	-----	-----	H4.(
EV0° 19 : Total V-eldahl Nitrogen By Discrete Analyser											
Total V-eldahl Nitrogen as N	-----	20	mg/kg	-----	-----	-----	-----	-----	-----	-----	120
EV0° 2: Total Nitrogen as N -TVN ` NOG3											
^ Total Nitrogen as N	-----	20	mg/kg	-----	-----	-----	-----	-----	-----	-----	1° 0
EP0° (A: Organochlorine Pesticides -OC3											

Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		QC11		BK27@		BK21(@		BK26@	
		Sampling date / time		14-Apr-2022 00:00		14-Apr-2022 00:00		14-Apr-2022 00:00		14-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	EB2210672@2H	EB2210672@2z	EB2210672@21	EB2210672@40	EB2210672@4H			
EP0° (A: Organochlorine Pesticides -OC3@continued											
alpha@KC	319-84-6	0.05	mg/kg								
Ke@chlorobenZene -KCB3	118-74-1	0.05	mg/kg								
beta@KC	319-85-7	0.05	mg/kg								
gamma@KC	58-89-9	0.05	mg/kg								
delta@KC	319-86-8	0.05	mg/kg								
Keptachlor	76-44-8	0.05	mg/kg								
Aldrin	309-00-2	0.05	mg/kg								
Keptachlor epoGde	1024-57-3	0.05	mg/kg								
^ Total Chlordane -sum3	----	0.05	mg/kg								
trans@hlordane	5103-74-2	0.05	mg/kg								
alpha@ndosulfan	959-98-8	0.05	mg/kg								
cis@hlordane	5103-71-9	0.05	mg/kg								
Dieldrin	60-57-1	0.05	mg/kg								
HH@DE	72-55-9	0.05	mg/kg								
Endrin	72-20-8	0.05	mg/kg								
beta@ndosulfan	33213-65-9	0.05	mg/kg								
^ Endosulfan -sum3	115-29-7	0.05	mg/kg								
HH@DD	72-54-8	0.05	mg/kg								
Endrin aldehyde	7421-93-4	0.05	mg/kg								
Endosulfan sulfate	1031-07-8	0.05	mg/kg								
HH@DT	50-29-3	0.2	mg/kg								
Endrin ketone	53494-70-5	0.05	mg/kg								
) ethoGychlor	72-43-5	0.2	mg/kg								
^ Sum of Aldrin ` Dieldrin	309-00-2/60-57-1	0.05	mg/kg								
^ Sum of DDD ` DDE ` DDT	72-54-8/72-55-9/5	0.05	mg/kg								
0-2											
EP0(0/071: Total Petroleum Kydrocarbons											
C° @-6 Fraction	----	10	mg/kg								
C10 @-1HFraction	----	50	mg/kg								
C1z @-21 Fraction	----	100	mg/kg								
C26 @-4° Fraction	----	100	mg/kg								
^ C10 @-4° Fraction -sum3	----	50	mg/kg								
EP0(0/071: Total Recoverable Kydrocarbons @NEP) 2014 Fractions											
C° @-10 Fraction	C6_C10	10	mg/kg								



Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		QC11		BK27@		BK21@		BK26@	
		Sampling date / time		14-Apr-2022 00:00		14-Apr-2022 00:00		14-Apr-2022 00:00		14-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	EB2210672@2H	EB2210672@2z	EB2210672@21	EB2210672@40	EB2210672@4H			
				Result	Result	Result	Result	Result			Result
EP0(0/071: Total Recoverable Kydrocarbons @NEP) 2014 Fractions @Continued											
^ C° @C10 Fraction minus BTEj		C6_C10-BTEX		10	mg/kg			<10			
-F13											
XC10 @C1° Fraction		----		50	mg/kg			<50			
XC1° @C4HFraction		----		100	mg/kg			<100			
XC4H @C4HFraction		----		100	mg/kg			<100			
^ XC10 @C4HFraction -sum3		----		50	mg/kg			<50			
^ XC10 @C1° Fraction minus Naphthalene		----		50	mg/kg			<50			
-F23											
EP0(0: BTEj N											
Benzene		71-43-2		0.2	mg/kg			<0.2			
Toluene		108-88-3		0.5	mg/kg			<0.5			
Ethylbenzene		100-41-4		0.5	mg/kg			<0.5			
meta@ para@ylene		108-38-3 106-42-3		0.5	mg/kg			<0.5			
ortho@ylene		95-47-6		0.5	mg/kg			<0.5			
^ Sum of BTEj		----		0.2	mg/kg			<0.2			
^ Total j ylenes		----		0.5	mg/kg			<0.5			
Naphthalene		91-20-3		1	mg/kg			<1			
EP0° (S: Organochlorine Pesticide Surrogate											
Dibromo@DE		21655-73-2		0.05	%						11H
EP0° (T: Organophosphorus Pesticide Surrogate											
DEF		78-48-8		0.05	%						142
EP0(0S: TPK-&3BTEj Surrogates											
1.2@ichloroethane@H		17060-07-0		0.2	%			(1°			
Toluene@		2037-26-5		0.2	%			60.1			
H@romofluorobenzene		460-00-4		0.2	%			101			



Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		BK26@	BK40@	BK40@	BK40@	BK40@	BK41@
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result	Result
EA002: pK 1:z -Soils3									
pK &alue	----	0.1	pH Unit						H0
EA010: Conductivity -1:z3									
Electrical Conductivity 5 ZzMC	----	1	µS/cm						11(0
EA0zz:) oisture Content -Dried 5 10z@10MC3									
) oisture Content	----	0.1	%			z.(			
) oisture Content	----	1.0	%			z.°		HH	°.7
ED00z: EGchange Acidity									
ø EG-change Acidity	----	0.1	meq/100g						2.6
ø EG-changeable Aluminium	----	0.1	meq/100g						2.°
ED00(: EGchangeable Cations									
EG-changeable Calcium	----	0.1	meq/100g						4.°
EG-changeable) agnesium	----	0.1	meq/100g						0.(
EG-changeable Potassium	----	0.1	meq/100g						<0.1
EG-changeable Sodium	----	0.1	meq/100g						<0.1
Cation EG-change Capacity	----	0.1	meq/100g						HH
EG-changeable Sodium Percent	----	0.1	%						0.7
Calcium/) agnesium Ratio	----	0.1	-						Hz
E9 00z-ED0643T: Total) etals by ICP@ES									
Arsenic	7440-38-2	5	mg/kg		<5			<5	<5
Cadmium	7440-43-9	1	mg/kg		<1			<1	<1
Chromium	7440-47-3	2	mg/kg		(			6	11
Copper	7440-50-8	5	mg/kg		<5			<5	(4
Lead	7439-92-1	5	mg/kg		<5			<5	171
Nickel	7440-02-0	2	mg/kg		(			(	H
8inc	7440-66-6	5	mg/kg		1H			1H	H°
E9 04zT: Total Recoverable) ercury by FI) S									
) ercury	7439-97-6	0.1	mg/kg		<0.1			<0.1	<0.1
EV0zz: Ammonia as N									
Ammonia as N	7664-41-7	20	mg/kg						<20
EV0z69 : Nitrite plus Nitrate as N -NO3 by Discrete Analyser									
Nitrite ` Nitrate as N -Sol.3	----	0.1	mg/kg						1z.2
EV0° 19 : Total Veldahl Nitrogen By Discrete Analyser									
Total Veldahl Nitrogen as N	----	20	mg/kg						410

Analytical Results

Sub-Matrix: SOIL
-Matrix: SOIL3

Sub-Matrix: SOIL		Sample ID		BK26@		BK40@		BK40@		BK40@		BK41@	
-Matrix: SOIL3		Sampling date / time		14-Apr-2022 00:00		14-Apr-2022 00:00		14-Apr-2022 00:00		14-Apr-2022 00:00		14-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	EB2210672@4°		EB2210672@H0		EB2210672@H1		EB2210672@H4		EB2210672@H	
				Result		Result		Result		Result		Result	
EV0°2: Total Nitrogen as N -TVN` NOG3													
^ Total Nitrogen as N				----	20	mg/kg	420						
EP0° (A: Organochlorine Pesticides -OC3													
alpha@KC	319-84-6	0.05	mg/kg	420		420		420		420		420	
Ke@chlorobenZene -KC3	118-74-1	0.05	mg/kg	420		420		420		420		420	
beta@KC	319-85-7	0.05	mg/kg	420		420		420		420		420	
gamma@KC	58-89-9	0.05	mg/kg	420		420		420		420		420	
delta@KC	319-86-8	0.05	mg/kg	420		420		420		420		420	
Keptachlor	76-44-8	0.05	mg/kg	420		420		420		420		420	
Aldrin	309-00-2	0.05	mg/kg	420		420		420		420		420	
Keptachlor epoGde	1024-57-3	0.05	mg/kg	420		420		420		420		420	
^ Total Chlordane -sum3	----	0.05	mg/kg	420		420		420		420		420	
trans@hlordane	5103-74-2	0.05	mg/kg	420		420		420		420		420	
alpha@ndosulfan	959-98-8	0.05	mg/kg	420		420		420		420		420	
cis@hlordane	5103-71-9	0.05	mg/kg	420		420		420		420		420	
Dieldrin	60-57-1	0.05	mg/kg	420		420		420		420		420	
HH@DE	72-55-9	0.05	mg/kg	420		420		420		420		420	
Endrin	72-20-8	0.05	mg/kg	420		420		420		420		420	
beta@ndosulfan	33213-65-9	0.05	mg/kg	420		420		420		420		420	
^ Endosulfan -sum3	115-29-7	0.05	mg/kg	420		420		420		420		420	
HH@DD	72-54-8	0.05	mg/kg	420		420		420		420		420	
Endrin aldehyde	7421-93-4	0.05	mg/kg	420		420		420		420		420	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	420		420		420		420		420	
HH@DT	50-29-3	0.2	mg/kg	420		420		420		420		420	
Endrin ketone	53494-70-5	0.05	mg/kg	420		420		420		420		420	
) ethoGchlor	72-43-5	0.2	mg/kg	420		420		420		420		420	
^ Sum of Aldrin` Dieldrin	309-00-2/60-57-1	0.05	mg/kg	420		420		420		420		420	
^ Sum of DDD` DDE` DDT	72-54-8/72-55-9/5	0.05	mg/kg	420		420		420		420		420	
				0-2									
EP07z-SI) 3B: Polynuclear Aromatic Kydrocarbons													
Naphthalene	91-20-3	0.5	mg/kg	420		420		420		420		420	
Acenaphthylene	208-96-8	0.5	mg/kg	420		420		420		420		420	
Acenaphthene	83-32-9	0.5	mg/kg	420		420		420		420		420	
Fluorene	86-73-7	0.5	mg/kg	420		420		420		420		420	
Phenanthrene	85-01-8	0.5	mg/kg	420		420		420		420		420	
Anthracene	120-12-7	0.5	mg/kg	420		420		420		420		420	



Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		BK26@		BK40@		BK40@		BK41@	
Compound	CAS Number	LOR	Unit	Sampling date / time	Result	Result	Result	Result	Result	Result	Result
EP07z-SI) 33: Polynuclear Aromatic Hydrocarbons @Continued											
Fluoranthene	206-44-0	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Pyrene	129-00-0	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
BenZ-a-anthracene	56-55-3	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Chrysene	218-01-9	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
BenZo-b`-fluoranthene	205-99-2	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
BenZo-k-fluoranthene	207-08-9	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
BenZo-a-pyrene	50-32-8	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Indeno-1,2,4-cd-pyrene	193-39-5	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
DibenZ-a,h-anthracene	53-70-3	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
BenZo-g,h,i,perylene	191-24-2	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
^ BenZo-a-pyrene TEQ -Zero3	----	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
^ BenZo-a-pyrene TEQ -half LOR3	----	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
^ BenZo-a-pyrene TEQ -LOR3	----	0.5	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
EP241A: Perfluoroalkyl Sulfonic Acids											
Perfluorobutane sulfonic acid -PFBS3	375-73-5	0.0002	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Perfluoropentane sulfonic acid -PFPeS3	2706-91-4	0.0002	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Perfluorooctane sulfonic acid -PFOS3	335-46-4	0.0002	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Perfluorooctane sulfonic acid -PFOS3	375-92-8	0.0002	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Perfluorooctane sulfonic acid -PFOS3	1763-23-1	0.0002	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Perfluorodecane sulfonic acid -PFDS3	335-77-3	0.0002	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
EP241B: Perfluoroalkyl Carboxylic Acids											
Perfluorobutanoic acid -PFBA3	375-22-4	0.001	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Perfluoropentanoic acid -PFPeA3	2706-90-3	0.0002	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Perfluorooctanoic acid -PFKGA3	307-24-4	0.0002	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Perfluorooctanoic acid -PFKpA3	375-85-9	0.0002	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Perfluorooctanoic acid -PFOA3	335-67-1	0.0002	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Perfluorononanoic acid -PFNA3	375-95-1	0.0002	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H
Perfluorodecanoic acid -PFDA3	335-76-2	0.0002	mg/kg	14-Apr-2022 00:00	EB2210672@4°	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H	EB2210672@H



Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		BK26@		BK40@		BK40@		BK40@		BK41@	
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result
EP241B: Perfluoroalkyl Carboxylic Acids @continued													
Perfluoroundecanoic acid -PFUnDA3	2058-94-8	0.0002		mg/kg						<0.0002			
Perfluorododecanoic acid -PFDoDA3	307-55-1	0.0002		mg/kg						<0.0002			
Perfluorotridecanoic acid -PFTriDA3	72629-94-8	0.0002		mg/kg						<0.0002			
Perfluorotetradecanoic acid -PFTeDA3	376-06-7	0.0005		mg/kg						<0.0005			
EP241C: Perfluoroalkyl Sulfonamides													
Perfluorooctane sulfonamide -FOSA3	754-91-6	0.0002		mg/kg						<0.0002			
N@ethyl perfluorooctane sulfonamide -) eFOSA3	31506-32-8	0.0005		mg/kg						<0.0005			
N@thyl perfluorooctane sulfonamide -EtFOSA3	4151-50-2	0.0005		mg/kg						<0.0005			
N@ethyl perfluorooctane sulfonamidoethanol -) eFOSE3	24448-09-7	0.0005		mg/kg						<0.0005			
N@thyl perfluorooctane sulfonamidoethanol -EtFOSE3	1691-99-2	0.0005		mg/kg						<0.0005			
N@ethyl perfluorooctane sulfonamidoacetic acid -) eFOSAA3	2355-31-9	0.0002		mg/kg						<0.0002			
N@thyl perfluorooctane sulfonamidoacetic acid -EtFOSAA3	2991-50-6	0.0002		mg/kg						<0.0002			
EP241D: -n:23Fluorotelomer Sulfonic Acids													
H2 Fluorotelomer sulfonic acid -H2 FTS3	757124-72-4	0.0005		mg/kg						<0.0005			
°:2 Fluorotelomer sulfonic acid -°:2 FTS3	27619-97-2	0.0005		mg/kg						<0.0005			
(:2 Fluorotelomer sulfonic acid -(:2 FTS3	39108-34-4	0.0005		mg/kg						<0.0005			
10:2 Fluorotelomer sulfonic acid -10:2 FTS3	120226-60-0	0.0005		mg/kg						<0.0005			
EP241P: PFAS Sums													
Sum of PFAS	----	0.0002		mg/kg						<0.0002			



Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		BK26@		BK40@		BK40@		BK40@		BK41@	
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result
EP241P: PFAS Sums @Continued													
Sum of PFKs and PFOS	355-46-4/1763-23-1	0.0002		mg/kg									
Sum of PFAS -WA DER List3	----	0.0002		mg/kg									
EP0° (S: Organochlorine Pesticide Surrogate													
Dibromo@DE	21655-73-2	0.05		%		11z							
EP0° (T: Organophosphorus Pesticide Surrogate													
DEF	78-48-8	0.05		%		141							
EP07z-SI) 3S: Phenolic Compound Surrogates													
Phenol@°	13127-88-3	0.5		%				102					
2@Hlorophenol@H	93951-73-6	0.5		%				6(.H					
2.H° @ribromophenol	118-79-6	0.5		%				6°.1					
EP07z-SI) 3T: PAK Surrogates													
2@luorobiphenyl	321-60-8	0.5		%				(7.0					
Anthracene@10	1719-06-8	0.5		%				6(.6					
H@erphenyl@1H	1718-51-0	0.5		%				60.H					
EP241S: PFAS Surrogate													
14CH@FOS	----	0.0002		%				11(					
14C(@FOA	----	0.0002		%				66.z					

Analytical Results

Sub-Matrix: SOIL
-Matrix: SOIL3

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		BK41@		BK42@		QC07		BK42@		BK42@	
Compound	CAS Number	Sampling date / time		LOR	Unit	Result		Result		Result		Result	
EA002: pK 1:z -Soils3													
pK &alue		----	0.1	pH Unit		----		----		(-)		----	
EA010: Conductivity -1:z3													
Electrical Conductivity 5 2zMC		----	1	µS/cm		----		----		z(0		----	
EA0zz:) oisture Content -Dried 5 10z@10MC3													
) oisture Content		----	1.0	%		1(		7.H		°.0		7.4	
ED00° : EG-changeable Cations on Alkaline Soils													
ø EG-changeable Calcium		----	0.2	meq/100g		----		----		<0.2		----	
ø EG-changeable) agnesium		----	0.2	meq/100g		----		----		1.0		----	
ø EG-changeable Potassium		----	0.2	meq/100g		----		----		<0.2		----	
ø EG-changeable Sodium		----	0.2	meq/100g		----		----		0.°		----	
ø Cation EG-change Capacity		----	0.2	meq/100g		----		----		1.z		----	
ø EG-changeable Sodium Percent		----	0.2	%		----		----		4°.H		----	
ø Calcium/) agnesium Ratio		----	0.2	-		----		----		<0.2		----	
E9 00z-ED0643T: Total) etals by ICP@ES													
Arsenic		7440-38-2	5	mg/kg		z		<5		<5		<5	
Cadmium		7440-43-9	1	mg/kg		1		<1		<1		<1	
Chromium		7440-47-3	2	mg/kg		H7		10		6		7	
Copper		7440-50-8	5	mg/kg		(H		14		11		<5	
Lead		7439-92-1	5	mg/kg		°°		1z		1°		<5	
Nickel		7440-02-0	2	mg/kg		(°		6		7		7	
8inc		7440-66-6	5	mg/kg		1zz		4H		44		16	
E9 04zT: Total Recoverable) ercury by FI) S													
) ercury		7439-97-6	0.1	mg/kg		0.1		<0.1		<0.1		<0.1	
EV0zz: Ammonia as N													
Ammonia as N		7664-41-7	20	mg/kg		----		----		<20		----	
EV0z69 : Nitrite plus Nitrate as N -NOG3 by Discrete Analyser													
Nitrite` Nitrate as N -Sol.3		----	0.1	mg/kg		----		----		<0.1		----	
EV0° 19 : Total V-eldahl Nitrogen By Discrete Analyser													
Total V-eldahl Nitrogen as N		----	20	mg/kg		----		----		120		----	
EV0° 2: Total Nitrogen as N -TVN` NOG3													
^ Total Nitrogen as N		----	20	mg/kg		----		----		120		----	
EP07z-SI) 3: Polynuclear Aromatic Hydrocarbons													
Naphthalene		91-20-3	0.5	mg/kg		----		----		<0.5		----	



Analytical Results

Sub-Matrix: SOIL -Matrix: SOIL3		Sample ID		BK41@	BK42@	QC07	BK42@	BK42@
Compound	CAS Number	LOR	Sampling date / time	Unit	Result	Result	Result	Result
EP07z-SI) 33: Polynuclear Aromatic Hydrocarbons @Continued								
Acenaphthylene	208-96-8	0.5	mg/kg					
Acenaphthene	83-32-9	0.5	mg/kg					
Fluorene	86-73-7	0.5	mg/kg					
Phenanthrene	85-01-8	0.5	mg/kg					
Anthracene	120-12-7	0.5	mg/kg					
Fluoranthene	206-44-0	0.5	mg/kg					
Pyrene	129-00-0	0.5	mg/kg					
BenZ-a-anthracene	56-55-3	0.5	mg/kg					
Chrysene	218-01-9	0.5	mg/kg					
BenZo-b-fluoranthene	205-99-2	0.5	mg/kg					
BenZo-k-fluoranthene	207-08-9	0.5	mg/kg					
BenZo-a-pyrene	50-32-8	0.5	mg/kg					
Indeno-1,2,4-cd-pyrene	193-39-5	0.5	mg/kg					
DibenZo-a,h-anthracene	53-70-3	0.5	mg/kg					
BenZo-g,h,i-perylene	191-24-2	0.5	mg/kg					
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg					
^ BenZo-a-pyrene TEQ -Zero3	---	0.5	mg/kg					
^ BenZo-a-pyrene TEQ -half LOR3	---	0.5	mg/kg					
^ BenZo-a-pyrene TEQ -LOR3	---	0.5	mg/kg					
EP07z-SI) 35: Phenolic Compound Surrogates								
Phenol@	13127-88-3	0.5	%					
2@chlorophenol@H	93951-73-6	0.5	%					
2.H° @tribromophenol	118-79-6	0.5	%					
EP07z-SI) 37: PAK Surrogates								
2@luorobiphenyl	321-60-8	0.5	%					
Anthracene@10	1719-06-8	0.5	%					
H@erphenyl@1H	1718-51-0	0.5	%					



Surrogate Control Limits

Sub-Matrix: SOIL			Recovery Limits (%)	
Compound	CAS Number		Low	High
EP0° (S: Organochlorine Pesticide Surrogate				
Dibromo@DE	21655-73-2		10	138
EP0° (T: Organophosphorus Pesticide Surrogate				
DEF	78-48-8		23	134
EP07z-S) 3S: Phenolic Compound Surrogates				
Phenol@°	13127-88-3		35	154
2@hlorophenol@H	93951-73-6		42	153
2.H° @ribromophenol	118-79-6		26	157
EP07z-S) 3T: PAK Surrogates				
2@luorobiphenyl	321-60-8		34	156
Anthracene@10	1719-06-8		37	153
H@erphenyl@1H	1718-51-0		42	172
EP0(0S: TPK-&3BTEj Surrogates				
1.2@ichloroethane@H	17060-07-0		53	134
Toluene@	2037-26-5		60	131
H@romofluorobenZene	460-00-4		59	127
EP241S: PFAS Surrogate				
14CH@FOS			76	136
14C(@FOA			78	131



Environmental

QUALITY CONTROL REPORT

Work Order : **EB2210672**

Page : 1 of 14

Client : **BUTLER PARTNERS PTY LTD**
Contact : **MS SUZANNE WALKER**
Address : **22 CORUNNA STREET**
ALBION QLD, AUSTRALIA 4010
Telephone : **+61 07 3852 3800**
Project : **018-150M**
Order number : **BP202054**
C-O-C number : **----**
Sampler : **RICHARD PEARCE**
Site : **89 Macathur Ave, Hamilton**
Quote number : **EN/222 (Planned event Tables)**
No. of samples received : **61**
No. of samples analysed : **25**

Laboratory : **Environmental Division Brisbane**
Contact : **Kimberly Hilton-Barber**
Address : **2 Byth Street Stafford QLD Australia 4053**
Telephone : **+61-7-3243 7222**
Date Samples Received : **20-Apr-2022**
Date Analysis Commenced : **22-Apr-2022**
Issue Date : **06-May-2022**



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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	Position	Accreditation Category
Ben Felgendreieris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
Timothy Creagh	2IC Organic Chemist	Brisbane Organics, Stafford, QLD

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 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.

= Indicates failed QC

The quality control term Laboratory Duplicate refers to a randomly selected intra-laboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: SOIL							Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EG005(ED0693T: To) t al e) t aMsb ICPyAES (QC Lo): - 2647873										
EB2210972-001	BH10-1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit	
		EG005T: Chromium	7440-47-3	2	mg/kg	12	11	9.4	No Limit	
		EG005T: Nickel	7440-02-0	2	mg/kg	9	8	0.0	No Limit	
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	6	0.0	No Limit	
		EG005T: Copper	7440-50-8	5	mg/kg	14	12	17.5	No Limit	
		EG005T: Lead	7439-92-1	5	mg/kg	18	15	18.0	No Limit	
EB2210972-025	BH27-4	EG005T: Zinc	7440-66-6	5	mg/kg	50	42	17.0	0% - 50%	
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit	
		EG005T: Chromium	7440-47-3	2	mg/kg	11	10	0.0	No Limit	
		EG005T: Nickel	7440-02-0	2	mg/kg	10	8	24.1	No Limit	
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Copper	7440-50-8	5	mg/kg	<5	9	55.9	No Limit	
EG005(ED0693T: To) t al e) t aMsb ICPyAES (QC Lo): - 2647863	QC07	EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Zinc	7440-66-6	5	mg/kg	16	29	59.0	No Limit	
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit	
		EG005T: Chromium	7440-47-3	2	mg/kg	8	8	0.0	No Limit	
		EG005T: Nickel	7440-02-0	2	mg/kg	8	8	0.0	No Limit	
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit	
EA002: cn 1:5 (Soia)B (QC Lo): - 2648713	BH32-2	EG005T: Copper	7440-50-8	5	mg/kg	8	7	0.0	No Limit	
		EG005T: Lead	7439-92-1	5	mg/kg	12	10	12.5	No Limit	
		EG005T: Zinc	7440-66-6	5	mg/kg	26	26	0.0	No Limit	
		EA002: pH Value	----	0.1	pH Unit	8.8	8.9	0.0	0% - 20%	



Sub-Matrix: SOIL

Laboratory sample ID		Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA010: CoudpHivi)b (1:53 (QC Lo): - 2648703										
EB2210864-041	Anonymous	EA010: Electrical Conductivity @ 25°C		---	1	µS/cm	1620	1480	8.7	0% - 20%
EB2210864-051	Anonymous	EA010: Electrical Conductivity @ 25°C		---	1	µS/cm	812	955	16.2	0% - 20%
EA010: CoudpHivi)b (1:53 (QC Lo): - 2648793										
EB2210972-057	BH32-2	EA010: Electrical Conductivity @ 25°C		---	1	µS/cm	580	572	1.4	0% - 20%
EA055: I oIMpre Coujeu) (Dried @ 105y10°C3 (QC Lo): - 2642083										
EB2210971-001	Anonymous	EA055: Moisture Content		---	0.1	%	9.1	9.1	0.0	0% - 20%
EB2210972-008	BH25-2	EA055: Moisture Content		---	0.1	%	8.2	7.6	7.5	No Limit
EA055: I oIMpre Coujeu) (Dried @ 105y10°C3 (QC Lo): - 264- 723										
EB2210972-001	BH10-1	EA055: Moisture Content		---	0.1	%	15.1	17.2	12.6	0% - 50%
EA055: I oIMpre Coujeu) (Dried @ 105y10°C3 (QC Lo): - 2647713										
EB2210972-010	BH25-4	EA055: Moisture Content		---	0.1	%	4.5	5.0	10.6	No Limit
EB2210972-049	BH31-2	EA055: Moisture Content		---	0.1	%	18.8	18.7	0.5	0% - 50%
ED005: ExHt uge AHdi)b (QC Lo): - 9044- 63										
EB2209958-036	Anonymous	ED005: Exchange Acidity		---	0.1	meq/100g	0.2	0.3	0.0	No Limit
		ED005: Exchangeable Aluminium		---	0.1	meq/100g	0.1	0.2	0.0	No Limit
ED008: ExHt uget sæ Ct)iouMou Akt aue SoiaM (QC Lo): - 9044- 03										
EB2210286-008	Anonymous	ED006: Exchangeable Calcium		---	0.2	meq/100g	4.4	5.3	18.0	0% - 20%
		ED006: Exchangeable Magnesium		---	0.2	meq/100g	0.5	0.6	22.7	No Limit
		ED006: Exchangeable Potassium		---	0.2	meq/100g	0.4	0.5	0.0	No Limit
		ED006: Exchangeable Sodium		---	0.2	meq/100g	<0.2	<0.2	0.0	No Limit
		ED006: Cation Exchange Capacity		---	0.2	meq/100g	5.3	6.4	18.6	0% - 20%
EB2210286-021	Anonymous	ED006: Exchangeable Calcium		---	0.2	meq/100g	1.2	0.8	32.3	No Limit
		ED006: Exchangeable Magnesium		---	0.2	meq/100g	0.7	0.6	19.4	No Limit
		ED006: Exchangeable Potassium		---	0.2	meq/100g	<0.2	<0.2	0.0	No Limit
		ED006: Exchangeable Sodium		---	0.2	meq/100g	0.4	0.4	0.0	No Limit
		ED006: Cation Exchange Capacity		---	0.2	meq/100g	2.5	1.8	31.2	0% - 50%
ED004: ExHt uget sæ Ct)iouM (QC Lo): - 9044503										
EB2209958-036	Anonymous	ED008: Exchangeable Calcium		---	0.1	meq/100g	6.7	6.4	3.6	0% - 20%
		ED008: Exchangeable Magnesium		---	0.1	meq/100g	5.3	5.2	0.0	0% - 20%
		ED008: Exchangeable Potassium		---	0.1	meq/100g	<0.1	<0.1	0.0	No Limit
		ED008: Exchangeable Sodium		---	0.1	meq/100g	3.2	3.1	0.0	0% - 20%
EG095T: To)t aReHbvert sæ I erHrb sb FIi S (QC Lo): - 2647843										
EB2210972-001	BH10-1	EG035T: Mercury		7439-97-6	0.1	mg/kg	0.1	<0.1	0.0	No Limit
EB2210972-025	BH27-4	EG035T: Mercury		7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG095T: To)t aReHbvert sæ I erHrb sb FIi S (QC Lo): - 2647703										
EB2210972-056	QC07	EG035T: Mercury		7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EK055: Ammouit t MN (QC Lo): - 2664993										
EB2210891-001	Anonymous	EK055: Ammonia as N		7664-41-7	20	mg/kg	<20	<20	0.0	No Limit



Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)		
EK055: Ammouit t MN (QC Lo): - 2664993 yHbu)uped											
EB2210984-004	Anonymous	EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	<20	0.0	No Limit		
EK056G: Nijr)je cəpMNI)rt)je t MN (NOx3 sb DiMHe)je Aut əbMer (QC Lo): - 2648723											
EB2210972-057	BH32-2	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit		
EK081G: Tojt aKjeəit haNi)rogeu Bb DiMHe)je Aut əbMer (QC Lo): - 2644843											
EB2210664-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	690	# 1030	39.2	0% - 20%		
EB2210926-005	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	1070	960	10.8	0% - 20%		
EP084A: OrgtuoHæriue PeMjHdeM(OC3 (QC Lo): - 264- 703											
EB2211097-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
				EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
				EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
				EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SII 3B: PoəbupHætr Aromt j)HnbdroHtrsoUM (QC Lo): - 264- 843											
EB2210971-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<1.6	<1.4	13.3	No Limit		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<1.4	<1.4	0.0	No Limit		
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	1.7	1.5	15.2	No Limit		



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL					Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SII) : 3B: Poðuphæt r Aromt iHnbdroHt rsouM (QC Lo): - 264- 843 yHbujiuped									
EB2210971-001	Anonymous	EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	0.7	0.7	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+ji)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP040/074: Tojt aPe)roæpm nbdroHt rsouM (QC Lo): - 2642053							
EB2210820-060	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EB2210972-008	BH25-2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP040/074: Tojt aPe)roæpm nbdroHt rsouM (QC Lo): - 264- 863									
EB2210971-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	3930	3570	9.6	0% - 20%
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	130	24.6	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	2070	1840	11.9	0% - 20%
		EP040/074: Tojt aReHovert sæ nbdroHt rsouMyNEPI 2019 Frt HjouiM (QC Lo): - 2642053							
EB2210820-060	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EB2210972-008	BH25-2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP040/074: Tojt aReHovert sæ nbdroHt rsouMyNEPI 2019 Frt HjouiM (QC Lo): - 264- 863									
EB2210971-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	2780	2560	8.1	0% - 20%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	120	18.2	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	3280	2930	11.2	0% - 20%
		EP040: BTEXN (QC Lo): - 2642053							
EB2210820-060	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EB2210972-008	BH25-2	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
		EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EP040: BTEXN (QC Lo): - 2642053 yHbu)uped										
EB2210972-008	BH25-2	EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
EP291A: Perfluorotributylamine (QC Lo): - 9029173										
EB2210844-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit	
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
EP291B: Perfluorotributylamine (QC Lo): - 9029173										
EB2210844-002	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit	
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit	
EP291C: Perfluorotributylamine (QC Lo): - 9029173										
EB2210844-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit	
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit	
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit	
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit	
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit	
EP291D: (u:23Faporo)eamer SpafouliAHdM (QC Lo): - 9029173										
EB2210844-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit	



Sub-Matrix: SOIL			Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP291D: (u:23 Faporo)aeomer SpafouliAHdM (QC Lo): - 9029173 yHou)iupeD									
EB2210844-002	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit



Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Laboratory Control Spike (LCS) Report				
				Method Blank (MB) Report		Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result				
EG005(ED0693T: To)t al e)t aMsb ICPAES (QCLO): - 2647873								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	83.4 mg/kg	113	84.0	123
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	---	---	---	---
EG005T: Chromium	7440-47-3	2	mg/kg	<2	14.1 mg/kg	99.4	83.0	125
EG005T: Copper	7440-50-8	5	mg/kg	<5	50 mg/kg	93.7	86.0	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.4 mg/kg	103	84.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	11.8 mg/kg	106	81.5	118
EG005T: Zinc	7440-66-6	5	mg/kg	<5	148.7 mg/kg	100	80.0	120
EG005(ED0693T: To)t al e)t aMsb ICPAES (QCLO): - 2647863								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	83.4 mg/kg	101	84.0	123
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	---	---	---	---
EG005T: Chromium	7440-47-3	2	mg/kg	<2	14.1 mg/kg	103	83.0	125
EG005T: Copper	7440-50-8	5	mg/kg	<5	50 mg/kg	94.9	86.0	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.4 mg/kg	99.3	84.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	11.8 mg/kg	107	81.5	118
EG005T: Zinc	7440-66-6	5	mg/kg	<5	148.7 mg/kg	96.7	80.0	120
EA002: cn 1:5 (SoiãB (QCLO): - 2648713								
EA002: pH Value	---	---	pH Unit	---	4 pH Unit 7 pH Unit	100 100	98.0 98.0	102 102
EA010: CoudpHjv)b (1:53 (QCLO): - 2648703								
EA010: Electrical Conductivity @ 25°C	---	1	µS/cm	<1	1412 µS/cm	98.7	97.0	103
EA010: CoudpHjv)b (1:53 (QCLO): - 2648793								
EA010: Electrical Conductivity @ 25°C	---	1	µS/cm	<1	1412 µS/cm	99.0	97.0	103
ED005: ExHt uge AHdi)b (QCLO): - 9044- 63								
ED005: Exchange Acidity	---	0.1	meq/100g	<0.1	---	---	---	---
ED005: Exchangeable Aluminium	---	0.1	meq/100g	<0.1	---	---	---	---
ED008: ExHt uget sã Ct JouMou Aãt àue SoiãM (QCLO): - 9044- 03								
ED006: Exchangeable Calcium	---	0.2	meq/100g	<0.2	6.708 meq/100g	77.8	70.0	130
ED006: Exchangeable Magnesium	---	0.2	meq/100g	<0.2	5.0353 meq/100g	79.9	70.0	130
ED006: Exchangeable Potassium	---	0.2	meq/100g	<0.2	1.0556 meq/100g	97.8	70.0	130
ED006: Exchangeable Sodium	---	0.2	meq/100g	<0.2	1.7599 meq/100g	93.6	70.0	130
ED006: Cation Exchange Capacity	---	0.2	meq/100g	<0.2	14.5588 meq/100g	81.9	70.0	130
ED004: ExHt uget sã Ct JouM (QCLO): - 9044503								
ED008: Exchangeable Calcium	---	0.1	meq/100g	<0.1	5.6 meq/100g	100.0	91.0	109

Sub-Matrix: SOIL				Laboratory Control Spike (LCS) Report								
Method: Compound		CAS Number	LOR	Unit	Method Blank (MB) Report		Spike		Spike Recovery (%)		Acceptable Limits (%)	
					Result		Concentration	LCS	Low	High		
ED004: Exchangeable Magnesium												
ED008: Exchangeable Magnesium	---	0.1	meq/100g	<0.1	6.9 meq/100g	101	89.0	111				
ED008: Exchangeable Potassium	---	0.1	meq/100g	<0.1	1.3 meq/100g	93.3	79.0	116				
ED008: Exchangeable Sodium	---	0.1	meq/100g	<0.1	0.7 meq/100g	79.9	75.0	118				
ED008: Cation Exchange Capacity	---	0.1	meq/100g	<0.1	14.5 meq/100g	98.8	88.0	110				
EG095T: Total Ammonium Nitrogen (TAN) (QCLO): - 2647843												
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	117	70.0	125				
EG095T: Total Ammonium Nitrogen (TAN) (QCLO): - 2647703												
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	111	70.0	125				
EK055: Ammonium Nitrogen (AN) (QCLO): - 2664993												
EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	25 mg/kg	93.8	80.0	110				
EK056G: Nitrate Nitrogen (NO3-N) (QCLO): - 2648723												
EK059G: Nitrite + Nitrate as N (Sol.)	---	0.1	mg/kg	<0.1	2.5 mg/kg	88.1	83.2	111				
EK081G: Total Kjeldahl Nitrogen (TKN) (QCLO): - 2644843												
EK061G: Total Kjeldahl Nitrogen as N	---	20	mg/kg	<20	306 mg/kg 2180 mg/kg	99.1 93.5	70.0 72.0	130 128				
EP084A: Organochlorine Pesticides (OC) (QCLO): - 264- 703												
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	107	72.8	127				
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	107	71.0	127				
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	107	67.5	126				
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	109	72.7	127				
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	70.6	122				
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	109	64.8	127				
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	105	72.4	122				
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	106	67.4	125				
EP068: Total Chlordane (sum)	---	0.05	mg/kg	<0.05	---	---	---	---				
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	106	65.6	124				
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.9	70.4	122				
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	107	65.6	125				
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	105	69.1	124				
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	106	72.4	125				
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	106	63.2	127				
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.7	120				
EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	---	---	---	---				
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	61.2	124				
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	95.1	55.5	125				
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.7	57.1	117				
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	111	51.9	125				
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.3	46.5	122				



Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	Low	High
EP084A: Orgt uoHæriue PeMjHdeM(OC3 (QCLo): - 264- 703 yHou)uped									
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	91.7	34.0	130	
EP068: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	---	---	---	---	
EP068: Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	---	---	---	---	
EP075(SIL 3B: PoðupHæt r Aromt jHnbdroHt rsouM (QCLo): - 264- 843									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	102	72.6	133	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	86.9	63.2	144	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	117	66.0	132	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	115	76.2	134	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	110	71.8	137	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	112	77.1	143	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	106	74.1	140	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	106	72.0	139	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	90.2	58.0	145	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	94.4	63.0	147	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	1.5 mg/kg	105	70.5	142	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	110	75.5	138	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	95.4	68.5	140	
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	124	58.4	143	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	132	52.1	149	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	122	64.6	140	
EP040/074: Tojt aPe)roæpm nbdroHt rsouM (QCLo): - 2642053									
EP080: C6 - C9 Fraction	---	10	mg/kg	<10	18 mg/kg	106	64.0	120	
EP040/074: Tojt aPe)roæpm nbdroHt rsouM (QCLo): - 264- 863									
EP071: C10 - C14 Fraction	---	50	mg/kg	<50	310 mg/kg	94.8	79.4	125	
EP071: C15 - C28 Fraction	---	100	mg/kg	<100	490 mg/kg	84.0	78.8	122	
EP071: C29 - C36 Fraction	---	100	mg/kg	<100	---	---	---	---	
EP040/074: Tojt aReHvært sæ nbdroHt rsouMNEPI 2019 Frt HjouM (QCLo): - 2642053									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	22.5 mg/kg	106	58.1	124	
EP040/074: Tojt aReHvært sæ nbdroHt rsouMNEPI 2019 Frt HjouM (QCLo): - 264- 863									
EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	450 mg/kg	89.5	81.0	132	
EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	320 mg/kg	86.5	67.2	130	
EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	---	---	---	---	
EP040: BTEXN (QCLo): - 2642053									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	91.9	68.0	107	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	92.3	69.0	108	



Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	Low	High
EP040: BTEXN (QCLo): - 2642053 yHou)uped									
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	84.5	68.0	68.0	109
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	99.5	70.0	70.0	114
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	104	74.0	74.0	116
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	95.6	74.0	74.0	109
EP291A: Perfluorotributylamine (PFTBA) (QCLo): - 9029173									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	100	72.0	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	97.4	73.0	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	86.9	67.0	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	84.4	70.0	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	97.8	68.0	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	85.0	59.0	59.0	134
EP291B: Perfluorooctadecanoic acid (PFODA) (QCLo): - 9029173									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	101	71.0	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	69.0	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.0	70.0	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.0	71.0	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	69.0	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.0	72.0	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.2	69.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.6	64.0	64.0	136
EP231X: Perfluorododecanoic acid (PFDDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.8	69.0	69.0	135
EP231X: Perfluorotridecanoic acid (PFTDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.0	66.0	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	105	69.0	69.0	133
EP291C: Perfluorooctadecanoic acid (PFODA) (QCLo): - 9029173									
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.8	67.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	103	59.6	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	100	62.8	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	103	61.5	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	96.2	61.9	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.2	63.0	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	61.0	61.0	139
EP291D: (u:23Faporo)eamer SpafouihAHdM (QCLo): - 9029173									
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	84.6	62.0	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	100	64.0	64.0	140



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report					
Method: Compound		CAS Number	LOR	Unit	Result	Spike Concentration		Spike Recovery (%)		Acceptable Limits (%)	
EP291D: (u:23Faporo)eamer SpafuuiH AHdM (QCLO): - 9029173 yHbu)iupeud											
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)		39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg		86.7		65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)		120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg		88.3		54.8	124

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EG005(ED0693T: Tojt al ejt aMsb ICPAES (QCLO): - 2647873							
EB2210972-002	BH10-2	EG005T: Arsenic	7440-38-2	100 mg/kg	84.9	70.0	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	92.5	70.0	130
		EG005T: Chromium	7440-47-3	100 mg/kg	89.8	70.0	130
		EG005T: Copper	7440-50-8	100 mg/kg	90.4	70.0	130
		EG005T: Lead	7439-92-1	100 mg/kg	94.9	70.0	130
		EG005T: Nickel	7440-02-0	100 mg/kg	91.2	70.0	130
EG005(ED0693T: Tojt al ejt aMsb ICPAES (QCLO): - 2647863	BH32-2	EG005T: Zinc	7440-66-6	100 mg/kg	91.2	70.0	130
		EG005T: Arsenic	7440-38-2	100 mg/kg	88.8	70.0	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	93.9	70.0	130
		EG005T: Chromium	7440-47-3	100 mg/kg	91.0	70.0	130
		EG005T: Copper	7440-50-8	100 mg/kg	93.1	70.0	130
		EG005T: Lead	7439-92-1	100 mg/kg	95.0	70.0	130
EG095T: Tojt aReHovert sæ l erHprb sb FII S (QCLO): - 2647843	BH10-2	EG005T: Nickel	7440-02-0	100 mg/kg	92.4	70.0	130
		EG005T: Zinc	7440-66-6	100 mg/kg	92.5	70.0	130
		EG035T: Mercury	7439-97-6	0.5 mg/kg	115	70.0	130
		EG035T: Mercury	7439-97-6	0.5 mg/kg	110	70.0	130
		EK055: Ammonia as N	7664-41-7	100 mg/kg	74.1	70.0	130
		EK056G: Nijrje cəMNIjrt) e t MN (NOx3 sb DiMHe) e Aut əMər (QCLO): - 2648723	----	2 mg/kg	# Not Determined	70.0	130
EG095T: Tojt aReHovert sæ l erHprb sb FII S (QCLO): - 2647703	BH32-2	EK059G: Nitrite + Nitrate as N (Sol.)	----	500 mg/kg	120	70.0	130
		EK055: Ammouit t MN (QCLO): - 2664993	----				
		EB2210677-070	Anonymous				
		EB2210972-048	BH31-1				
		EK081G: Tojt aKjeat haNi)rogeu Bb DiMHe) e Aut əMər (QCLO): - 2644843	----				
		EB2210664-002	Anonymous				



Sub-Matrix: SOIL

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EP084A: Orgtuohæriue PeMjHdeM(OC3 (QCLO): - 264- 703							
EB2210972-007	BH25-1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	96.2	70.0	136
		EP068: Heptachlor	76-44-8	0.5 mg/kg	100	65.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	98.5	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	97.2	67.0	129
		EP068: Endrin	72-20-8	0.5 mg/kg	97.3	60.0	137
		EP068: 4,4'-DDT	50-29-3	0.5 mg/kg	100	70.0	130
EP075(SII: 3B: PoðupHæt r Aromt)iHnbdroHt rsouM (QCLO): - 264- 843							
EB2210971-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	85.7	66.0	132
		EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	92.0	70.0	130
EP040/071: Tojt aPe)roæpm nbdroHt rsouM (QCLO): - 2642053							
EB2210820-061	Anonymous	EP080: C6 - C9 Fraction	-----	8 mg/kg	104	70.0	130
EP040/071: Tojt aPe)roæpm nbdroHt rsouM (QCLO): - 264- 863							
EB2210971-002	Anonymous	EP071: C10 - C14 Fraction	-----	310 mg/kg	# Not Determined	70.0	130
		EP071: C15 - C28 Fraction	-----	490 mg/kg	# Not Determined	70.0	130
EP040/071: Tojt aReHøvert sæ nbdroHt rsouMyNEPI 2019 Frt HjouM (QCLO): - 2642053							
EB2210820-061	Anonymous	EP080: C6 - C10 Fraction	C6_C10	8 mg/kg	73.7	70.0	130
EP040/071: Tojt aReHøvert sæ nbdroHt rsouMyNEPI 2019 Frt HjouM (QCLO): - 264- 863							
EB2210971-002	Anonymous	EP071: >C10 - C16 Fraction	-----	450 mg/kg	# Not Determined	70.0	130
		EP071: >C16 - C34 Fraction	-----	320 mg/kg	# Not Determined	70.0	130
EP040: BTEXN (QCLO): - 2642053							
EB2210820-061	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	92.3	70.0	130
		EP080: Toluene	108-88-3	2 mg/kg	93.0	70.0	130
EP291A: Perfæporot æbaSpæfouIHdM (QCLO): - 9029173							
EB2210844-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	103	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	105	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	98.3	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	114	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	91.4	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	93.4	59.0	134
EP291B: Perfæporot æbaCt rsoxæbæIHdM (QCLO): - 9029173							
EB2210844-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	101	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	98.8	69.0	132



Sub-Matrix: SOIL

Sub-Matrix: SOIL							
			Matrix Spike (MS) Report				
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%)	
EP291B: Perfluorotributylamine (QCLo): - 9029173 y(hu)uped							
EB2210844-001	Anonymous	EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	92.4	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	83.2	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	103	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	107	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	82.4	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	100	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	96.1	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.00125 mg/kg	96.8	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	107	69.0	133
EP291C: Perfluorotributylamine (QCLo): - 9029173							
EB2210844-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	101	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	110	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	95.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	105	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	114	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	84.1	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	104	61.0	139
EP291D: (u:23Faporo)æmer SpåfouH AHdM (QCLo): - 9029173							
EB2210844-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	80.4	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	117	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	115	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	124	70.0	130



Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EB2210972	Page	: 1 of 13
Client	: BUTLER PARTNERS PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MS SUZANNE WALKER	Telephone	: +61-7-24j 2 7444
Project	: 318-153M	Date Samples Received	: 43-Apr-4344
Site	: 89 Macathur Ave, Hamilton	Issue Date	: 36-May-4344
Sampler	: RICHARD PEARCE	No. of samples received	: 61
Order number	: BP43435j	No. of samples analysed	: 45

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- NO Method Blank value outliers occur.
- NO Laboratory Control outliers occur.
- Duplicate outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, NO surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- NO Quality Control Sample Frequency Outliers exist.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EK361G: Total Kjeldahl Nitrogen By Discrete Analyser	EB441366j --331	Anonymous	Total Kjeldahl Nitrogen as N	----	29.4 %	3% - 43%	RPD exceeds LOR based limits
Matrix Spike (MS) Recoveries							
EK359G: Nitrite plus Nitrate as N (NOx) by Discrete An	EB4413974--3j 8	BH21-1	Nitrite + Nitrate as N (Sol.)	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP383/371: Total Petroleum Hydrocarbons	EB4413971--334	Anonymous	C10 - C14 Fraction	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP383/371: Total Petroleum Hydrocarbons	EB4413971--334	Anonymous	C15 - C28 Fraction	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP383/371: Total Recoverable Hydrocarbons - NEPM 4	EB4413971--334	Anonymous	>C10 - C16 Fraction	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP383/371: Total Recoverable Hydrocarbons - NEPM 4	EB4413971--334	Anonymous	>C16 - C34 Fraction	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

Outliers : Analysis Holding Time Compliance

Matrix: SOIL

Method	Extraction / Preparation			Analysis	
Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Days overdue
EA002: pH 1:5 (Soils)					
Soil Glass Jar - Unpreserved BH49-1, BH24-4	46-Apr-4344	41-Apr-4344	5	-----	-----
EA010: Conductivity (1:5)					
Soil Glass Jar - Unpreserved BH49-1, BH24-4	46-Apr-4344	41-Apr-4344	5	-----	-----



Analysis Holding Time Compliance

If samples are identified below; as having been analysed or extracted outside of recommended holding times, this should be taken into consideration; when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with the ALS recommended holding times (referencing USEPA SW 8j, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 1j days, mercury 48 days and other metals 183 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days, others 1j days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: * = Holding time breach ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation		Analysis			
Container / Client Sample ID(s)	Date extracted		Due vor extraction	Evaluation	Date analysed	Due vor analysis		
EA002: pH 1:5 (Soils)								
Soil Glass Jar - Unpreserved (EA002) BH49-1, BH24-4	BH21-1,	14-Apr-2022	26-Apr-2022	41-Apr-4344	✖	26-Apr-2022	46-Apr-4344	✓
	EA010: Conductivity (1:5)							
Soil Glass Jar - Unpreserved (EA010) BH49-1, BH24-4	BH21-1,	14-Apr-2022	26-Apr-2022	41-Apr-4344	✖	26-Apr-2022	4j-May-4344	✓
	EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055) BH48-1		14-Apr-2022				22-Apr-2022	48-Apr-4344	✓
	EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) BH13-1, BH45-1, BH45-j , BH46-1, BH47-1, QC11, BH48-2, BH49-2, BH23-4, BH21-1, BH24-1, BH24-4,	BH13-4, BH45-4, QC39, BH46-4, BH47-2, BH47-j , BH49-1, BH23-1, BH23-j , BH21-4, QC37, BH24-j	14-Apr-2022				22-Apr-2022	48-Apr-4344	✓
ED005: Exchange Acidity								
Soil Glass Jar - Unpreserved (ED005) BH21-1 BH49-1,		14-Apr-2022	28-Apr-2022	14-May-4344	✓	03-May-2022	14-May-4344	✓
	BH24-4	14-Apr-2022	28-Apr-2022	14-May-4344	✓	29-Apr-2022	14-May-4344	✓



Matrix: **SOIL** Evaluation: * = Holding time breach ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation		Efaluation	Analysis		
Container / Client Sample ID(s)			Date extracted	Due vor extraction		Date analysed	Due vor analysis	Efaluation
ED006: Exchangeable Cations on Alkaline Soils								
Soil Glass Jar - Unpreserved (ED006)								
BH21-1	BH24-4	14-Apr-2022	28-Apr-2022	14-May-4344	✓	29-Apr-2022	14-May-4344	✓
Soil Glass Jar - Unpreserved (ED006) BH49-1,		14-Apr-2022	29-Apr-2022	14-May-4344	✓	03-May-2022	14-May-4344	✓
ED007: Exchangeable Cations								
Soil Glass Jar - Unpreserved (ED007)								
BH21-1	BH24-4	14-Apr-2022	28-Apr-2022	14-May-4344	✓	03-May-2022	14-May-4344	✓
Soil Glass Jar - Unpreserved (ED007) BH49-1,		14-Apr-2022	28-Apr-2022	14-May-4344	✓	29-Apr-2022	14-May-4344	✓
ED008: Exchangeable Cations								
Soil Glass Jar - Unpreserved (ED008)								
BH21-1	BH24-4	14-Apr-2022	28-Apr-2022	14-May-4344	✓	03-May-2022	14-May-4344	✓
Soil Glass Jar - Unpreserved (ED008) BH49-1,		14-Apr-2022	28-Apr-2022	14-May-4344	✓	29-Apr-2022	14-May-4344	✓
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
BH13-1, BH45-4, QC39, BH46-1, BH47-1, QC11, BH48-1, BH49-1, BH23-1, BH21-1, BH24-1, QC37, BH24-j		14-Apr-2022	22-Apr-2022	11-Oct-4344	✓	03-May-2022	11-Oct-4344	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
BH13-1, BH45-4, QC39, BH46-4, BH47-2, BH47-j , BH48-1, BH48-2, BH49-2, BH23-1, BH21-1, BH24-1, QC37, BH24-j		14-Apr-2022	22-Apr-2022	14-May-4344	✓	03-May-2022	14-May-4344	✓



Matrix: SOIL Evaluation: * = Holding time breach ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation		Analysis	
Container / Client Sample ID(s)	Date extracted		Due vor extraction	Efaluation	Date analysed	Due vor analysis
EK055: Ammonia as N						
Soil Glass Jar - Unpreserved (EK055) BH49-1, BH24-4	BH21-1,	14-Apr-2022	----	----	22-Apr-2022	14-May-4344
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser						
Soil Glass Jar - Unpreserved (EK059G) BH49-1, BH24-4	BH21-1,	14-Apr-2022	26-Apr-2022	14-May-4344	26-Apr-2022	48-Apr-4344
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser						
Soil Glass Jar - Unpreserved (EK061G) BH49-1, BH24-4	BH21-1,	14-Apr-2022	22-Apr-2022	14-May-4344	26-Apr-2022	43-May-4344
EP068A: Organochlorine Pesticides (OC)						
Soil Glass Jar - Unpreserved (EP068) BH13-1, BH49-1,	BH45-1, BH23-1	14-Apr-2022	22-Apr-2022	48-Apr-4344	26-Apr-2022	31-Jun-4344
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved (EP075(SIM)) BH13-4, BH46-4, BH23-4,	BH45-4, BH47-1, BH24-4	14-Apr-2022	22-Apr-2022	48-Apr-4344	26-Apr-2022	31-Jun-4344
EP080/071: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved (EP080) BH45-4, BH48-1	BH47-1,	14-Apr-2022	22-Apr-2022	48-Apr-4344	22-Apr-2022	48-Apr-4344
Soil Glass Jar - Unpreserved (EP071) BH45-4, BH48-1	BH47-1,	14-Apr-2022	22-Apr-2022	48-Apr-4344	26-Apr-2022	31-Jun-4344
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions						
Soil Glass Jar - Unpreserved (EP080) BH45-4, BH48-1	BH47-1,	14-Apr-2022	22-Apr-2022	48-Apr-4344	22-Apr-2022	48-Apr-4344
Soil Glass Jar - Unpreserved (EP071) BH45-4, BH48-1	BH47-1,	14-Apr-2022	22-Apr-2022	48-Apr-4344	26-Apr-2022	31-Jun-4344
EP080: BTEXN						
Soil Glass Jar - Unpreserved (EP080) BH45-4, BH48-1	BH47-1,	14-Apr-2022	22-Apr-2022	48-Apr-4344	22-Apr-2022	48-Apr-4344
EP231A: Perfluoroalkyl Sulfonic Acids						
HDPE Soil Jar (EP231X) BH46-1,	BH23-4	14-Apr-2022	26-Apr-2022	11-Oct-4344	28-Apr-2022	35-Jun-4344



Matrix: SOIL Evaluation: * = Holding time breach ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation		Evaluation	Analysis			
Container / Client Sample ID(s)			Date extracted	Due vor extraction		Date analysed	Due vor analysis		
EP231B: Perfluoroalkyl Carboxylic Acids									
HDPE Soil Jar (EP231X)		BH23-4	14-Apr-2022	26-Apr-2022	11-Oct-4344	✓	28-Apr-2022	35-Jun-4344	✓
EP231C: Perfluoroalkyl Sulfonamides									
HDPE Soil Jar (EP231X)		BH23-4	14-Apr-2022	26-Apr-2022	11-Oct-4344	✓	28-Apr-2022	35-Jun-4344	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
HDPE Soil Jar (EP231X)		BH23-4	14-Apr-2022	26-Apr-2022	11-Oct-4344	✓	28-Apr-2022	35-Jun-4344	✓
EP231P: PFAS Sums									
HDPE Soil Jar (EP231X)		BH23-4	14-Apr-2022	26-Apr-2022	11-Oct-4344	✓	28-Apr-2022	35-Jun-4344	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed; within the analytical lot(s) in which the submitted sample(s); as(ere) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: * = Quality Control frequency not within specification ✓ = Quality Control frequency within specification

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification	
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Buchi Ammonia	EK355	4	16	12.50	10.00	✓	NEPM 4312 B2 q ALS QC Standard
Electrical Conductivity (1:5)	EA313	2	41	14.29	10.00	✓	NEPM 4312 B2 q ALS QC Standard
Exchange Acidity by 1M Potassium Chloride	ED335	1	4	50.00	10.00	✓	NEPM 4312 B2 q ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED336	4	43	10.00	10.00	✓	NEPM 4312 B2 q ALS QC Standard
Exchangeable Cations; with pre-treatment	ED338	1	4	50.00	10.00	✓	NEPM 4312 B2 q ALS QC Standard
Moisture Content	EA355	5	25	14.29	10.00	✓	NEPM 4312 B2 q ALS QC Standard
Nitrite and Nitrate as N (NO _x -) Soluble by Discrete Analyser	EK359G	1	2	33.33	10.00	✓	NEPM 4312 B2 q ALS QC Standard
PAH/Phenols (SIM)	EP375(SIM)	1	9	11.11	10.00	✓	NEPM 4312 B2 q ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP421X	1	9	11.11	10.00	✓	NEPM 4312 B2 q ALS QC Standard
Pesticides by GCMS	EP368	1	7	14.29	10.00	✓	NEPM 4312 B2 q ALS QC Standard
pH (1:5)	EA334	1	5	20.00	10.00	✓	NEPM 4312 B2 q ALS QC Standard
TKN as N By Discrete Analyser	EK361G	4	43	10.00	10.00	✓	NEPM 4312 B2 q ALS QC Standard
Total Mercury by FIMS	EG325T	2	42	13.04	10.00	✓	NEPM 4312 B2 q ALS QC Standard
Total Metals by ICP-AES	EG335T	2	42	13.04	10.00	✓	NEPM 4312 B2 q ALS QC Standard
TRH - Semivolatile Fraction	EP371	1	13	10.00	10.00	✓	NEPM 4312 B2 q ALS QC Standard
TRH &olatiles/BTEX	EP383	4	43	10.00	10.00	✓	NEPM 4312 B2 q ALS QC Standard
Laboratory Control Samples (LCS)							
Buchi Ammonia	EK355	1	16	6.25	5.00	✓	NEPM 4312 B2 q ALS QC Standard
Electrical Conductivity (1:5)	EA313	4	41	9.52	5.00	✓	NEPM 4312 B2 q ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED336	1	43	5.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard
Exchangeable Cations; with pre-treatment	ED338	1	4	50.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard
Nitrite and Nitrate as N (NO _x -) Soluble by Discrete Analyser	EK359G	1	2	33.33	5.00	✓	NEPM 4312 B2 q ALS QC Standard
PAH/Phenols (SIM)	EP375(SIM)	1	9	11.11	5.00	✓	NEPM 4312 B2 q ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP421X	1	9	11.11	5.00	✓	NEPM 4312 B2 q ALS QC Standard
Pesticides by GCMS	EP368	1	7	14.29	5.00	✓	NEPM 4312 B2 q ALS QC Standard
pH (1:5)	EA334	4	5	40.00	10.00	✓	NEPM 4312 B2 q ALS QC Standard
TKN as N By Discrete Analyser	EK361G	4	43	10.00	10.00	✓	NEPM 4312 B2 q ALS QC Standard
Total Mercury by FIMS	EG325T	4	42	8.70	5.00	✓	NEPM 4312 B2 q ALS QC Standard
Total Metals by ICP-AES	EG335T	4	42	8.70	5.00	✓	NEPM 4312 B2 q ALS QC Standard
TRH - Semivolatile Fraction	EP371	1	13	10.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard
TRH &olatiles/BTEX	EP383	1	43	5.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard
Method Blanks (MB)							
Buchi Ammonia	EK355	1	16	6.25	5.00	✓	NEPM 4312 B2 q ALS QC Standard
Electrical Conductivity (1:5)	EA313	4	41	9.52	5.00	✓	NEPM 4312 B2 q ALS QC Standard



Matrix: **SOIL** Evaluation: * = Quality Control frequency not ; ifthin specification ✓ = Quality Control frequency ; ifthin specification.

Quality Control Sample Type		Method	Count			Rate (%)		Quality Control Specification	
Analytical Methods			QC	Regular	Actual	Expected	Evaluation		
Method Blanks (MB) - Continued									
Exchange Acidity by 1M Potassium Chloride		ED335	1	4	50.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Exchangeable Cations on Alkaline Soils		ED336	1	43	5.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Exchangeable Cations ; ith pre-treatment		ED338	1	4	50.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser		EK359G	1	2	33.33	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
PAH/Phenols (SIM)		EP375(SIM)	1	9	11.11	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS		EP421X	1	9	11.11	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Pesticides by GCMS		EP368	1	7	14.29	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
TKN as N By Discrete Analyser		EK361G	1	43	5.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Total Mercury by FIMS		EG325T	4	42	8.70	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Total Metals by ICP-AES		EG335T	4	42	8.70	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
TRH - Semivolatile Fraction		EP371	1	13	10.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
TRH &olatiles/BTEX		EP383	1	43	5.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Matrix Spikes (MS)									
Buchi Ammonia		EK355	1	16	6.25	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser		EK359G	1	2	33.33	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
PAH/Phenols (SIM)		EP375(SIM)	1	9	11.11	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS		EP421X	1	9	11.11	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Pesticides by GCMS		EP368	1	7	14.29	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
TKN as N By Discrete Analyser		EK361G	1	43	5.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Total Mercury by FIMS		EG325T	4	42	8.70	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
Total Metals by ICP-AES		EG335T	4	42	8.70	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
TRH - Semivolatile Fraction		EP371	1	13	10.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard	
TRH &olatiles/BTEX		EP383	1	43	5.00	5.00	✓	NEPM 4312 B2 q ALS QC Standard	



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA334	SOIL	In house: Referenced to Rayment and Lyons j A1 and APHA j 533H+. pH is determined on soil samples after a 1:5 soil/; after leach. This method is compliant with NEPM Schedule B(2).
Electrical Conductivity (1:5)	EA313	SOIL	In house: Referenced to Rayment and Lyons 2A1 and APHA 4513. Conductivity is determined on soil samples using a 1:5 soil/; after leach. This method is compliant with NEPM Schedule B(2).
Moisture Content	EA355	SOIL	In house: A gravimetric procedure based on eight loss over a 14 hour drying period at 135-113 degrees C. This method is compliant with NEPM Schedule B(2).
Exchange Acidity by 1M Potassium Chloride	* ED335	SOIL	In house: referenced to Rayment and Lyons, method 15G1. This method is unsuitable for near neutral and alkaline soils. NATA accreditation does not cover performance of this service.
Exchangeable Cations on Alkaline Soils	* ED336	SOIL	In house: Referenced to Soil Survey Test Method C5. Soluble salts are removed from the sample prior to analysis. Cations are exchanged from the sample by contact with alcoholic ammonium chloride at pH 8.5. They are then quantified in the final solution by ICPAES and reported as mew/133g of original soil.
Exchangeable Cations	ED337	SOIL	In house: Referenced to Rayment q Lyons Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantified in the final solution by ICPAES and reported as mew/133g of original soil. This method is compliant with NEPM Schedule B(2).
Exchangeable Cations with pre-treatment	ED338	SOIL	In house: Referenced to Rayment q Lyons Method 15A4. Soluble salts are removed from the sample prior to analysis. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantified in the final solution by ICPAES and reported as mew/133g of original soil. This method is compliant with NEPM Schedule B(2).
Total Metals by ICP-AES	EG335T	SOIL	In house: Referenced to APHA 2143VUSEPA SW 8j 6 - 6313. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(2)
Total Mercury by FIMS	EG325T	SOIL	In house: Referenced to APHA 2114 Hg - B (Flow Injection) (SnCl4) (Cold vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids is determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl4, which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(2)
Buchi Ammonia	EK355	SOIL	In house: Referenced to APHA j 533-NH2 BqG, H Samples are steam distilled (Buchi) prior to analysis and quantified using titration, FIA or Discrete Analyser.
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK359G	SOIL	In house: Thermo Scientific Method D38747 and NEMI (National Environmental Method Index) Method ID: 9171. This method covers the determination of total oxidised nitrogen (NOx-N) and nitrate (NO2-N) by calculation, Combined oxidised Nitrogen (NO4+NO2) in a water extract is determined by direct colourimetry by Discrete Analyser.
TKN as N By Discrete Analyser	EK361G	SOIL	In house: Referenced to APHA j 533-Norg-D Soil samples are digested using Kjeldahl digestion following determination by Discrete Analyser.
Total Nitrogen as N (TKN + NOx) By Discrete Analyser	EK364G	SOIL	In house: Referenced to APHA j 533 Norg/NO2- Total Nitrogen is determined as the sum of TKN and Oxidised Nitrogen, each determined separately as N.



Analytical Methods		Method	Matrix	Method Descriptions
Pesticides by GC/MS		EP368	SOIL	In house: Referenced to USEPA SW 8j 6 - 8473 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant ; ith NEPM Schedule B(2).
TRH - Semivolatile Fraction		EP371	SOIL	In house: Referenced to USEPA SW 8j 6 - 8315 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C13 - Cj 3. Compliant ; ith NEPM Schedule B(2).
PAH/Phenols (SIM)		EP375(SIM)	SOIL	In house: Referenced to USEPA SW 8j 6 - 8473. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant ; ith NEPM Schedule B(2)
TRH & volatiles/BTEX		EP383	SOIL	In house: Referenced to USEPA SW 8j 6 - 8463. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant ; ith NEPM Schedule B(2) amended.
Per- and Polyfluoroalkyl Substances (PFAS) by LC/MS/MS		EP421X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantification. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil ; which is then extracted ; ith MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined ; ith an equal volume reagent ; after and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.2, table B-15 requirements.
Preparation Methods		Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method (Alkaline Soils)		ED336PR	SOIL	In house: Referenced to Raymond and Lyons method 15C1.
Exchangeable Cations Preparation Method		ED337PR	SOIL	In house: Referenced to Raymond q Lyons method 15A1. A 1M NH ₄ Cl extraction by end over end tumbling at a ratio of 1:43. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
TKN/TP Digestion		EK361/EK367	SOIL	In house: Referenced to APHA j 533 Norg- DVAPHA j 533 P - H. Macro K ₂ dahl digestion.
1:5 solid / ; after leach for soluble analytes		EN2i	SOIL	13 g of soil is mixed ; ith 53 mL of reagent grade ; after and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the ; after filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges		EN69	SOIL	In house: Referenced to USEPA 433.4. Hot Block Acid Digestion 1.3g of sample is heated ; ith Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant ; ith NEPM Schedule B(2).
Methanolic Extraction of Soils for Purge and Trap		ORG16	SOIL	In house: Referenced to USEPA SW 8j 6 - 5323A. 5g of solid is shaken ; ith surrogate and 13mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids		ORG17	SOIL	In house: Mechanical agitation (tumbler). 13g of sample, Na ₄ SO ₄ and surrogate are extracted ; ith 23mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
QuEChERS Extraction of Solids		ORG71	SOIL	In house: Sequential extractions ; ith Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed ; ith dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.



Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EB2210972

Client	: BUTLER PARTNERS PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MS SUZANNE WALKER	Contact	: Kimberly Hilton-Barber
Address	: PP CORUNNA SXREEX ALBON 6 LD7AUSXRALA FTI T	Address	: P ByTV Street StaYord 6 LD AQstralia FT, 4
E-mail	: s0hal0erf bQteruarners5com5aQ	E-mail	: 05Mltonbarberf als3lobal5com
XeleuVone	: kwl T@4p, P 4pTT	XeleuVone	: kwl -@4PF4 @PPP
. acsimile	: kwl T@4p, P 4pTp	. acsimile	: kwl -@4PF4 @Pl p
groeect	: TI p-I , TM	ga3e	: I oYF
Order nQmber	: BgPTPT, F	6 Qote nQmber	: EBPTI wBUXgARTTT4 1EN8PPP 1gplanned event Xablesjj
C-O-C nQmber	: ----	6 C Level	: NEgM PTI 4 B4 (ALS 6 C Standard
Site	: p/ MacatVQ Ave7Hamilton		
Samuler	: RZCHARD gEARCE		

Dates

Date Samules Received	: PT-Aur-PTPP I , , , T	2sQe Date	: PI -Aur-PTPP
Client Re) Qested DQe	: Pp-Aur-PTPP	ScVedQed Reuortin3 Date	: 04-May-2022
Date			

Delivery Details

Mode oYDelivery	: Carrier	SecQity Seal	: 2ntact5
No5oYcoolers8o8es	: P	XemueratQe	: I @59C7I , 59C - 2e uresent
Receiut Detail	:	No5oYsamules received 8analysed	: wL 8P,

General Comments

- XVis reuort contains tVe Ylloh in3 inYormation:
 - Samule Container'sjg reservation Non-Comuliances
 - SQmmary oYSamule'sj and Re) Qested Analysis
 - groactive Holdin3 Xime Reuort
 - Re) Qested Deliverables
- glease be advised tVat h Vere S-, and S-Pware re) Qested on smule BHP, -P on tVe received CVain oYCOstody7ALS Vas assi3ned S-Pw52tVtis is incorrect ulease contact client services as soon as uossible via: ALSEnviro5Brisbanef als3lobal5com or uV: 4PF4 @PPP5
- glease be advised tVat h Vere tVe label Yr g. AS container Yr ALS qPp reads BHPp-P and Lid reads BHPp-I 7ALS Vas assi3ned LD 2I Yr analysis
- glease be advised tVat h Vere label container Yr container qPP reads BHP@4 and lid rad BHP@7ALS Vas assi3ned LD 2I Yr analysis
- The laboratory acknowledges your requested reporting date of 5 day TAT, however due to the analytical request and associated procedures involved the requested due date will not be possible. Please note the best practical due date has been assigned.**
- DiscoQnted gac0a3e grices auuly only h Ven sueciYc ALS x roQr Codes 1W7'S7'NX"sQtesj are reYerenced on COCs5
- glease direct any tQn aroQnd 8tecVnical) Qeries to tVe laboratory contact desi3nated above5
- Samule Disuosal - A) QeoQs 14 h ee0sj 7Solid 1P montVs # I h ee0j Yom receiut oYsamules5
- Analysis h ill be condQcted by ALS Environmental7Brisbane7NAXA accreditation no5pP, 7Site No5pl p 1Micro site no5l p / , pj5
- Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- glease be ah are tVat Ag HA8NEgM recommends h ater and soil samules be cVilled to less tVan o e) Qal to w8C Yr cVemical analysis7and less tVan o e) Qal to I T9C bQ QhYoGen Yr Microbiolo3ical analysis5WVere samules are received above tVtis temueratQe7it sVoQd be ta0en into consideration h Ven interuretin3 resQts5ReYr to ALS EnviroMail p, Yr ALS recommendations oYtVe best uractice Yr cVillin3 samules aYer samulin3 and Yr maintainin3 a cool temueratQe dQin3 transit5
- Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against uretreatment&reservation AS7Ag HA7USEgA 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. Samples may contain additional analyses as the determination of moisture content and uretreatment standards are included in the analysis.

2/ no sampling time is provided. The sampling time will be determined on the date of sampling. 2/ no sampling date is provided. The sampling date will be assigned by the laboratory and displayed in brackets hitVoQ a time component

Matrix: SOIL

Laboratory sample ID	Sampling date / time	Sample ID	On Hold SO2 No analysis requested	SO2 - EAT, - T4 Moisture Content	SO2 - Eg TwpA solids Organoc Marine pesticides by x CMS	SO2 - Eg T@ S2M gAH only S2M - gAH only	SO2 - Eg P41 ± solids g. AS - . QI S2M Pp analyses	SO2 - S-TP p Metals 1nc5D3estonj	SO2 - S-Pw p metals&RHBXE± N&AH
EBPP T/ @-TTI	I F-Aur-PTPP TT:TT	BHI T-I		✓	✓			✓	
EBPP T/ @-TTP	I F-Aur-PTPP TT:TT	BHI T-P		✓		✓		✓	
EBPP T/ @-TT4	I F-Aur-PTPP TT:TT	BHI T-4	✓						
EBPP T/ @-TTF	I F-Aur-PTPP TT:TT	BHI T-F	✓						
EBPP T/ @-TT,	I F-Aur-PTPP TT:TT	BHI T-,	✓						
EBPP T/ @-TTw	I F-Aur-PTPP TT:TT	BHI T-w	✓						
EBPP T/ @-TT@	I F-Aur-PTPP TT:TT	BHP, -I		✓	✓				
EBPP T/ @-TTP	I F-Aur-PTPP TT:TT	BHP, -P		✓					✓
EBPP T/ @-TT/	I F-Aur-PTPP TT:TT	BHP, -4	✓						
EBPP T/ @-TI T	I F-Aur-PTPP TT:TT	BHP, -F		✓				✓	
EBPP T/ @-TI I	I F-Aur-PTPP TT:TT	6 CT/		✓				✓	
EBPP T/ @-TI P	I F-Aur-PTPP TT:TT	BHP, -,	✓						
EBPP T/ @-TI 4	I F-Aur-PTPP TT:TT	BHP, -w	✓						
EBPP T/ @-TI F	I F-Aur-PTPP TT:TT	BHPw-I		✓			✓	✓	
EBPP T/ @-TI ,	I F-Aur-PTPP TT:TT	BHPw-P		✓		✓		✓	
EBPP T/ @-TI w	I F-Aur-PTPP TT:TT	BHPw-4	✓						
EBPP T/ @-TI @	I F-Aur-PTPP TT:TT	BHPw-F	✓						
EBPP T/ @-TI p	I F-Aur-PTPP TT:TT	BHPw-,	✓						
EBPP T/ @-TI /	I F-Aur-PTPP TT:TT	BHPw-w	✓						
EBPP T/ @-TPT	I F-Aur-PTPP TT:TT	BHPw-@	✓						
EBPP T/ @-TPI	I F-Aur-PTPP TT:TT	BHP@		✓					✓
EBPP T/ @-TPP	I F-Aur-PTPP TT:TT	BHP@P	✓						
EBPP T/ @-TP4	I F-Aur-PTPP TT:TT	BHP@4		✓				✓	
EBPP T/ @-TPF	I F-Aur-PTPP TT:TT	6 CI I		✓				✓	
EBPP T/ @-TP,	I F-Aur-PTPP TT:TT	BHP@F		✓				✓	
EBPP T/ @-TPw	I F-Aur-PTPP TT:TT	BHP@,	✓						
EBPP T/ @-TP@	I F-Aur-PTPP TT:TT	BHP@w	✓						
EBPP T/ @-TPp	I F-Aur-PTPP TT:TT	BHPp-I		✓					
EBPP T/ @-TP/	I F-Aur-PTPP TT:TT	BHPp-P	✓						
EBPP T/ @-T4T	I F-Aur-PTPP TT:TT	BHPp-4		✓				✓	
EBPP T/ @-T4I	I F-Aur-PTPP TT:TT	BHPp-F	✓						
EBPP T/ @-T4P	I F-Aur-PTPP TT:TT	BHPp-,	✓						
EBPP T/ @-T44	I F-Aur-PTPP TT:TT	BHPp-w	✓						
EBPP T/ @-T4F	I F-Aur-PTPP TT:TT	BHP/ -I		✓	✓			✓	
EBPP T/ @-T4,	I F-Aur-PTPP TT:TT	BHP/ -P	✓						

2sQe Date : PI -Aur-PTPP
 ga3e : 4 oYF
 Wor0 Order : EBPPi T/ @ Amendment T
 Client : BUXLER g ARXNERS g X' LXD



			On Holdj SO2 No analysis re) Cested	SO2 - EAT, - I T4 MoistQre Content	SO2 - Eg TwpA 'Solidsj Or3anocVlorine gesticides by x CMS	SO2 - Eg T@ S2M gAH only S2M - gAH only	SO2 - Eg P4I ± 'Solidsj g. AS - , QI SQte 'Pp analytesj	SO2 - S-TP p Metals 'fncd5D3estonj	SO2 - S-Pw p metals8XRHBXE± N8jAH
EBPPI T/ @-T4w	I F-Aur-PTPP TT:TT	BHP/ -4		✓				✓	
EBPPI T/ @-T4@	I F-Aur-PTPP TT:TT	BHP/ -F	✓						
EBPPI T/ @-T4p	I F-Aur-PTPP TT:TT	BHP/ -,	✓						
EBPPI T/ @-T4/	I F-Aur-PTPP TT:TT	BHP/ -w	✓						
EBPPI T/ @-TFT	I F-Aur-PTPP TT:TT	BH4T-I		✓	✓			✓	
EBPPI T/ @-TFI	I F-Aur-PTPP TT:TT	BH4T-P		✓		✓	✓		
EBPPI T/ @-TFP	I F-Aur-PTPP TT:TT	BH4T-4	✓						
EBPPI T/ @-TF4	I F-Aur-PTPP TT:TT	BH4T-F		✓				✓	
EBPPI T/ @-TFF	I F-Aur-PTPP TT:TT	BH4T-,	✓						
EBPPI T/ @-TF,	I F-Aur-PTPP TT:TT	BH4T-w	✓						
EBPPI T/ @-TFw	I F-Aur-PTPP TT:TT	BH4T-@	✓						
EBPPI T/ @-TF@	I F-Aur-PTPP TT:TT	BH4T-p	✓						
EBPPI T/ @-TFp	I F-Aur-PTPP TT:TT	BH4I -I		✓				✓	
EBPPI T/ @-TF/	I F-Aur-PTPP TT:TT	BH4I -P		✓				✓	
EBPPI T/ @-T, T	I F-Aur-PTPP TT:TT	BH4I -4	✓						
EBPPI T/ @-T, I	I F-Aur-PTPP TT:TT	BH4I -F	✓						
EBPPI T/ @-T, P	I F-Aur-PTPP TT:TT	BH4I -,	✓						
EBPPI T/ @-T, 4	I F-Aur-PTPP TT:TT	BH4I -w	✓						
EBPPI T/ @-T, F	I F-Aur-PTPP TT:TT	BH4I -@	✓						
EBPPI T/ @-T, ,	I F-Aur-PTPP TT:TT	BH4P-I		✓				✓	
EBPPI T/ @-T, w	I F-Aur-PTPP TT:TT	6 CT@		✓				✓	
EBPPI T/ @-T, @	I F-Aur-PTPP TT:TT	BH4P-P		✓		✓		✓	
EBPPI T/ @-T, p	I F-Aur-PTPP TT:TT	BH4P-4	✓						
EBPPI T/ @-T, /	I F-Aur-PTPP TT:TT	BH4P-F		✓				✓	
EBPPI T/ @-TwT	I F-Aur-PTPP TT:TT	BH4P-,	✓						
EBPPI T/ @-Tw	I F-Aur-PTPP TT:TT	BH4P-w	✓						

Matri& SOIL

Laboratory sample ID Sampling date / time Sample ID

EBPPI T/ @-TPp	I F-Aur-PTPP TT:TT	BHPp-I	SO2 - Ax -I EB Only A3ricQIqal Soil SQte I EB Only	SO2 - EKT, , 'Solidsj Ammonia as N	SO2 - EKTwpX 'Solidsj Xotal Nitro3en as N 1xKN k NO&j By Discrete	SO2 - S-T, XRHBXE± N8j Metals
EBPPI T/ @-T4F	I F-Aur-PTPP TT:TT	BHP/ -I	✓	✓	✓	
EBPPI T/ @-TFp	I F-Aur-PTPP TT:TT	BH4I -I	✓	✓	✓	
EBPPI T/ @-T, @	I F-Aur-PTPP TT:TT	BH4P-P	✓	✓	✓	

s0h al0erf bQ1leruarters5com5aQ

PO Box 2267, Fortitude Valley BC Qld 4006
(22 Corunna Street, Albion Qld 4010)
Ph: (07) 3256 2900 Fax: (07) 3256 2901Job No: 018-150M
Site: 88 Macarthur Ave, HamiltonOrder No: BP202054
COC No: 2Austral
32 St

Telephone: + 61-7-3243 7222

Quotation Number: EN222118 (Butler Partners)

Project Manager:

Suzanne Walker

Sampled By:

Richard Pearce

Results To:

Suzanne Walker (swalker@butlerpartners.com.au)

Relinquished by:

Mike Mellis (mmellis@butlerpartners.com.au)

Invoice To:

Richard Pearce (rpearce@butlerpartners.com.au)

Date Sample Submitted to External Lab:

19 April 2022

Due Date:

5 Day TAT

Special Instructions:

Yes - BIP-RIFA-G003

Fire Ant Zone?

Yes - BIP-RIFA-G003

Lab Sample No.	Sample Reference	Sample Depth	Sample Type	No. of Jars/Vials	Date Sampled	g metals	TRH / BTEXN	TRH / BTEXN / 8 Metals	TRH / BTEXN / PAH	TRH / BTEXN / PAH / OC / PCB / 8 Metals	PFAS Full Suite	OC / OP	PCBs	PAH (sum)	OC Pesticides	S-26	pH and EC	Exchangeable Cations, ECEC and ESP	Total N (incl TKN and Nox)	Ammonia (NH3)	Neutral (D) Leach	Cr Suite	Cr-C ₁₀ BTEXN	HOLD
1	BH10-1	0.02-0.25	soil	1	14-Apr-22	x									x									
2	BH10-2	0.4-0.5	soil	1	14-Apr-22	x								x										
3	BH10-3	0.8-1.0	soil	1	14-Apr-22																			x
4	BH10-4	1.3-1.5	soil	1	14-Apr-22																			x
5	BH10-5	1.9-2.1	soil	1	14-Apr-22																			x
6	BH10-6	2.3-2.5	soil	1	14-Apr-22																			x
7	BH25-1	0.02-0.25	soil	1	14-Apr-22										x									
8	BH25-2	0.3-0.5	soil	1	14-Apr-22												x							
9	BH25-3	0.8-1.0	soil	1	14-Apr-22																			x
10	BH25-4	1.3-1.5	soil	1	14-Apr-22																			
11	QC09		soil	1	14-Apr-22	x																		
12	BH25-5	1.8-2.0	soil	1	14-Apr-22																			x
13	BH25-6	2.3-2.5	soil	1	14-Apr-22																			x
14	BH26-1	0.1-0.3	soil	2	14-Apr-22	x																		
15	BH26-2	0.4-0.5	soil	1	14-Apr-22	x																		
16	BH26-3	0.8-1.0	soil	1	14-Apr-22																			x
17	BH26-4	1.3-1.5	soil	1	14-Apr-22																			x
18	BH26-5	1.8-2.0	soil	1	14-Apr-22																			x
19	BH26-6	2.3-2.5	soil	1	14-Apr-22																			x
20	BH26-7	2.8-3.0	soil	1	14-Apr-22																			x
21	BH27-1	0.05-0.25	soil	1	14-Apr-22																			x

PO Box 2267, Fortitude Valley BC Qld 4006
(22 Corunna Street, Albion Qld 4010)
Ph: (07) 3256 2900 Fax: (07) 3256 2901

Job No: _____
Site: _____

018-150M
89 Macarthur Ave. Hamilton

Order No: _____
COC No. _____

2
BP202054

Australian Laboratory Services Pty Ltd
32 Shand Street, Stafford QLD 4053
Ph: (07) 3243 7222

Quotation Number:

EN/222/18 (Butler Partners)

Project Manager:

Suzanne Walker

Sampled By:

Richard Pearce

Results To:

Suzanne Walker (skwalker@butlerpartners.com.au)

Richard Pearce (pearce@butlernpartners.com a

Relinquished

Mike Melles

Invoice To:

BPaccounts@butlerpartners.com.au

Date Sample Submitted to External Lab:

19 April 2022

Due Date:

5 Day TAT

Special Instructions:

Fire Ant Zone?

Yes - BIP-RIFA-G003

[illegible]

Job No:
Site:018-150M
88 Macarthur Ave, HamiltonOrder No:
COC No.BP202054
2Australian Laboratory Services Pty Ltd
32 Shand Street, Stafford QLD 4053
Ph: (07) 3243 7222

Quotation Number:

EN/22/18 (Butler Partners)

Project Manager:

Suzanne Walker

Sampled By:

Richard Pearce

Results To:

Suzanne Walker (skwalker@butlerpartners.com.au)

Mike Melles (mmelles@butlerpartners.com.au)

Richard Pearce (rpearce@butlerpartners.com.au)

Mike Melles

BPhacounts@butlerpartners.com.au

19 April 2022

Due Date:

5 Day TAT

Special Instructions:

Yes - BIP-RIFA-G003

Fire Ant Zone?

Lab Sample No.	Sample Reference	Sample Depth	Sample Type	No. of Jars/Vials	Date Sampled	8 metals	TRH / BTEXN	TRH / BTEXN / Pb	TRH / BTEXN / PAH	TRH / BTEXN / PAH / OC / PCB / 8 Metals	PFAS Full Suite	OC / OP	PCBs	PAH	OC Pesticides	S-26 TRH / BTEXN / PAH / 8 Metals	pH and EC	Exchangeable Cations, ECOC and ESP	Total N (incl TKN and Nox)	Ammonia (NH3)	Neutral (D) Leach:	Cr Suite	W-18 Cr-C1/BTEXN	HOLD
43	BH30-4	1.3-1.5	soil	1	14-Apr-22	x																		
44	BH30-5	1.8-2.0	soil	1	14-Apr-22																			
45	BH30-6	2.3-2.5	soil	1	14-Apr-22																			
46	BH30-7	2.8-3.0	soil	1	14-Apr-22																			
47	BH30-8	3.3-3.5	soil	1	14-Apr-22																			
48	BH31-1	0.15-0.25	soil	1	14-Apr-22	x																		
49	BH31-2	0.3-0.5	soil	2	14-Apr-22	x																		
50	BH31-3	0.8-1.0	soil	1	14-Apr-22																			
51	BH31-4	1.3-1.5	soil	1	14-Apr-22																			
52	BH31-5	1.8-2.0	soil	1	14-Apr-22																			
53	BH31-6	2.2-2.3	soil	1	14-Apr-22																			
54	BH31-7	2.7-3.0	soil	1	14-Apr-22																			
55	BH32-1	0.1-0.25	soil	2	14-Apr-22	x																		
56	QC07		soil	1	14-Apr-22	x																		
57	BH32-2	0.4-0.5	soil	1	14-Apr-22	x																		
58	BH32-3	0.8-1.0	soil	1	14-Apr-22																			
59	BH32-4	1.3-1.5	soil	1	14-Apr-22	x																		
60	BH32-5	1.8-2.0	soil	1	14-Apr-22																			
61	BH32-6	2.3-2.5	soil	1	14-Apr-22																			
TOTALS:						20	0	2	0	0	0	2	0	0	4	4	2	3	3	3	0	0	0	37



Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EB2213149	Page	: 1 of 11
Client	: BUTLER PARTNERS PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MS SUZANNE WALKER	Contact	: Kimberly Hilton-Barber
Address	: PO BOX 2267 FORTITUDE VALLEY BC QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3852 3800	Telephone	: +61-7-3243 7222
Project	: 018-150M	Date Samples Received	: 09-May-2022 15:56
Order number	: BP202128	Date Analysis Commenced	: 13-May-2022
C-O-C number	: 5	Issue Date	: 24-May-2022 17:44
Sampler	: ---		
Site	: 89 Macarthur Ave, Hamilton		
Quote number	: EN/222 (Planned event Tables)		
No. of samples received	: 10		
No. of samples analysed	: 10		



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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	Position	Accreditation Category
Mark Hallas	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD



Page : 2 of 11
Work Order : EB2213149
Client : BUTLER PARTNERS PTY LTD
Project : 018-150M

General Comments

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

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X-INJ PFAS: The LOR values of PFOS for samples "BH03-1"(EB2213149-001) & "BH03-1"(EB2213149-008) have been raised due to matrix interferences.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.
- EN33: Where leachable PFAS analysis is requested, centrifugation rather than pressure filtration is used as the default approach for removal of particulates, in line with AS 4439.3.
- EN60-DI: Where leachable PFAS analysis is requested, centrifugation rather than pressure filtration is used as the default approach for removal of particulates, in line with AS 4439.3.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.



Analytical Results

Sub-Matrix: DI WATER LEACHATE
(Matrix: WATER)

Sub-Matrix: DI WATER LEACHATE (Matrix: WATER)		Sample ID		Sampling date / time		BH03-1 DI Leachate		BH03-2 DI Leachate		BH19-5 DI Leachate			
		CAS Number	LOR	Unit	12-Apr-2022 00:00	12-Apr-2022 00:00	13-Apr-2022 00:00						
Compound					Result	EB2213149-001	Result	EB2213149-002	Result	EB2213149-003	Result		
EG005(ED093)C: Leachable Metals by ICPAES													
Arsenic	7440-38-2	0.1	mg/L					0.3					
EP071: Total Petroleum Hydrocarbons													
C10 - C14 Fraction		50	µg/L							<50			
C15 - C28 Fraction		100	µg/L							<100			
C29 - C36 Fraction		50	µg/L							<50			
^ C10 - C36 Fraction (sum)		50	µg/L							<50			
EP071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions													
>C10 - C16 F fraction		100	µg/L							<100			
>C16 - C34 F fraction		100	µg/L							<100			
>C34 - C40 F fraction		100	µg/L							<100			
^ >C10 - C40 F fraction (sum)		100	µg/L							<100			
EP231A: Perfluoroalkyl Sulfonic Acids													
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L			<0.02							
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L			<0.02							
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L			<0.01							
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L			<0.02							
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L			<0.03							
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L			<0.02							
EP231B: Perfluoroalkyl Carboxylic Acids													
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L			<0.10							
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L			<0.02							
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L			<0.02							
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L			<0.02							
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L			<0.01							
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L			<0.02							
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L			<0.02							
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L			<0.02							



Analytical Results

Sub-Matrix: DI WATER LEACHATE (Matrix: WATER)		Sample ID					
Compound	CAS Number	LOR	Sampling date / time	BH03-1 DI Leachate 12-Apr-2022 00:00 EB2213149-001 Result	BH03-2 DI Leachate 12-Apr-2022 00:00 EB2213149-002 Result	BH19-5 DI Leachate 13-Apr-2022 00:00 EB2213149-003 Result	
EP231B: Perfluoroalkyl Carboxylic Acids - Continued							
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02			
Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.02	µg/L	<0.02			
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05			
EP231C: Perfluoroalkyl Sulfonamides							
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02			
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05			
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05			
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05			
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05			
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02			
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02			
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05			
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05			
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05			
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05			
EP231P: PFAS Sums							
Sum of PFAS	----	0.01	µg/L	<0.01			
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01			



Analytical Results

Sub-Matrix: DI WATER LEACHATE (Matrix: WATER)		Sample ID		BH03-1 DI Leachate		BH03-2 DI Leachate		BH19-5 DI Leachate			
Compound	CAS Number	Sampling date / time		12-Apr-2022 00:00		12-Apr-2022 00:00		13-Apr-2022 00:00			
	LOR	Unit		EB2213149-001	EB2213149-002	EB2213149-003	Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued											
Sum of PFAS (WA DER List)			0.01	µg/L	<0.01						
EP231S: PFAS Surrogate											
13C4-PFOS			0.02	%	103						
13C8-PFOA			0.02	%	97.7						



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH03-1 DI Leachate		BH03-2 DI Leachate		BH19-5 DI Leachate		BH23-1		BH29-1	
Compound	CAS Number	Sampling date / time	LOR	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)													
Moisture Content			0.1	%						5.3		7.7	
EK067G: Total Phosphorus as P by Discrete Analyser													
Total Phosphorus as P			2	mg/kg						314		168	
EN60-DI: Bottle Leaching Procedure - Inorganics/Non-Volatile Organics (Glass Vessel)													
Final pH			0.1	pH Unit		8.9		8.6					
EN60-DI: Bottle Leaching Procedure - Inorganics/PFAS (Plastic Vessel)													
Final pH			0.1	pH Unit	8.3								

Analytical Results

Sub-Matrix: SOIL
(Matrix: SOIL)

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		BH31-1		BH32-2		BH03-1		BH03-2		BH19-5	
		Sampling date / time		14-Apr-2022 00:00		14-Apr-2022 00:00		12-Apr-2022 00:00		12-Apr-2022 00:00		13-Apr-2022 00:00	
Compound	CAS Number	LOR	Unit	EB2213149-006		EB2213149-007		EB2213149-008		EB2213149-009		EB2213149-010	
				Result		Result		Result		Result		Result	
EA055: Moisture Content (Dried @ 105-110°C)													
Moisture Content		0.1	%	7.3		6.9							
EK067G: Total Phosphorus as P by Discrete Analyser													
Total Phosphorus as P		2	mg/kg	416		230							
EN33: TCLP Leach - Inorganics/Non-Volatile Organics (Glass Vessel)													
Initial pH		0.1	pH Unit							9.0		8.7	
After HCl pH		0.1	pH Unit							1.5		1.5	
Extraction Fluid Number		1	-							1		1	
Final pH		0.1	pH Unit							5.1		5.0	
EN33: TCLP Leach - Inorganics/PFAS (Plastic Vessel)													
Initial pH		0.1	pH Unit							7.9			
After HCl pH		0.1	pH Unit							1.5			
Extraction Fluid Number		1	-							1			
Final pH		0.1	pH Unit							5.1			



Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)		Sample ID		Sampling date / time		BH03-1 TCLP Leachate		BH03-2 TCLP Leachate		BH19-5 TCLP Leachate	
Compound	CAS Number	LOR	Unit	Result	Result	Result	Result	Result	Result	Result	Result
EG005(ED093)C: Leachable Metals by ICPAES											
Arsenic	7440-38-2	0.1	mg/L	0.1	<0.1						
EP071: Total Petroleum Hydrocarbons											
C10 - C14 Fraction		50	µg/L							60	
C15 - C28 Fraction		100	µg/L							<100	
C29 - C36 Fraction		50	µg/L							<50	
^ C10 - C36 Fraction (sum)		50	µg/L							60	
EP071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions											
>C10 - C16 Fraction		100	µg/L							<100	
>C16 - C34 Fraction		100	µg/L							<100	
>C34 - C40 Fraction		100	µg/L							<100	
^ >C10 - C40 Fraction (sum)		100	µg/L							<100	
EP231A: Perfluoroalkyl Sulfonic Acids											
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02							
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02							
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01							
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02							
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.02							
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02							
EP231B: Perfluoroalkyl Carboxylic Acids											
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L	<0.10							
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02							
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02							
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02							
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01							
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02							
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02							
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02							



Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)		Sample ID				BH03-1 TCLP Leachate		BH03-2 TCLP Leachate		BH19-5 TCLP Leachate			
Compound	CAS Number	LOR	Unit	Sampling date / time									
EP231B: Perfluoroalkyl Carboxylic Acids - Continued													
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L			<0.02							
Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.02	µg/L			<0.02							
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L			<0.05							
EP231C: Perfluoroalkyl Sulfonamides													
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L			<0.02							
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L			<0.05							
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L			<0.05							
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L			<0.05							
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L			<0.05							
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L			<0.02							
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L			<0.02							
EP231D: (n:2) Fluorotelomer Sulfonic Acids													
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L			<0.05							
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L			<0.05							
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L			<0.05							
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L			<0.05							
EP231P: PFAS Sums													
Sum of PFAS	----	0.01	µg/L			<0.01							
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L			<0.01							



Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)		Sample ID		BH03-1 TCLP Leachate		BH03-2 TCLP Leachate		BH19-5 TCLP Leachate						
Compound	CAS Number	Sampling date / time		LOR	Unit	12-Apr-2022 00:00		12-Apr-2022 00:00		13-Apr-2022 00:00				
						EB2213149-008		EB2213149-009		EB2213149-010				
				Result		Result		Result						
EP231P: PFAS Sums - Continued														
Sum of PFAS (WA DER List)				0.01	µg/L	<0.01								
EP231S: PFAS Surrogate														
13C4-PFOS				0.02	%	85.2								
13C8-PFOA				0.02	%	97.7								



Surrogate Control Limits

Sub-Matrix: DI WATER LEACHATE			
Compound	CAS Number	Recovery Limits (%)	
EP231S: PFAS Surrogate			
13C4-PFOS	13C4-0000	65	140
13C8-PFOA	13C8-0000	71	133
Sub-Matrix: TCLP LEACHATE			
Compound	CAS Number	Recovery Limits (%)	
EP231S: PFAS Surrogate			
13C4-PFOS	13C4-0000	65	140
13C8-PFOA	13C8-0000	71	133



Environmental

QUALITY CONTROL REPORT

Work Order : **EB2213149**

Page : 1 of 8

Client : **BUTLER PARTNERS PTY LTD**
Contact : **MS SUZANNE WALKER**
Address : **PO BOX 2267**
FORTITUDE VALLEY BC QLD, AUSTRALIA 4006
Telephone : **+61 07 3852 3800**
Project : **018-150M**
Order number : **BP202128**
C-O-C number : **5**
Sampler : **----**
Site : **89 Macarthur Ave, Hamilton**
Quote number : **EN/222 (Planned event Tables)**
No. of samples received : **10**
No. of samples analysed : **10**

Laboratory : **Environmental Division Brisbane**
Contact : **Kimberly Hilton-Barber**
Address : **2 Byth Street Stafford QLD Australia 4053**
Telephone : **+61-7-3243 7222**
Date Samples Received : **09-May-2022**
Date Analysis Commenced : **13-May-2022**
Issue Date : **24-May-2022**



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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	Position	Accreditation Category
Mark Hallas	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD



General Comments

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

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

RPD = Relative Percentage Difference

= Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4337060)									
EB2213024-001	Anonymous	EA055: Moisture Content	----	0.1	%	21.5	22.3	3.7	0% - 20%
EB2213161-002	Anonymous	EA055: Moisture Content	----	0.1	%	56.2	60.8	7.8	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4337059)									
EB2213161-002	Anonymous	EK067G: Total Phosphorus as P	----	2	mg/kg	576	542	6.0	0% - 20%
EB2213024-001	Anonymous	EK067G: Total Phosphorus as P	----	2	mg/kg	288	326	12.3	0% - 20%

Sub-Matrix: **WATER**

Sub-Matrix: WATER			Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)C: Leachable Metals by ICPAES (QC Lot: 4347028)									
EB2212821-001	Anonymous	EG005C: Arsenic	7440-38-2	0.1	mg/L	<0.1	<0.1	0.0	No Limit
EB2213147-003	Anonymous	EG005C: Arsenic	7440-38-2	0.1	mg/L	<0.1	<0.1	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4355229)									
EB2213149-001	BH03-1 DI Leachate	EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.03	<0.03	0.0	No Limit
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4355229)										
EB2213149-001	BH03-1 DI Leachate	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit	
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit	
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit	
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit	
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit	
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit	
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit	
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit	
		EP231X-INJ: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit	
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit	
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4355229)										
EB2213149-001	BH03-1 DI Leachate	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit	
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit	
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit	
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit	
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit	
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit	
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit	
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4355229)										
EB2213149-001	BH03-1 DI Leachate	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit	
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit	
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit	
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit	
EP231P: PFAS Sums (QC Lot: 4355229)										
EB2213149-001	BH03-1 DI Leachate	EP231X-INJ: Sum of PFAS	---	0.01	µg/L	<0.01	<0.01	0.0	No Limit	
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit	



Sub-Matrix: **WATER**

Laboratory sample ID		Sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			
EP231P: PFAS Sums (QC Lot: 4355229) - continued							Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EB2213149-001		BH03-1 DI Leachate	EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit



Page : 5 of 8
Work Order : EB2213149
Client : BUTLER PARTNERS PTY LTD
Project : 018-150M

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Control Spike (LCS) Report					
Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Spike	Spike Recovery (%)		Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High	
EN33: TCLP Leach - Inorganics/Non-Volatile Organics (Glass Vessel) (QCLot: 4336067)									
EN33a-G: Final pH	68-103-26-2	0.1	pH Unit	5.0	68-103-26-2			68-103-26-2	68-103-26-2
EN33: TCLP Leach - Inorganics/PFAS (Plastic Vessel) (QCLot: 4336070)									
EN33a-P: Initial pH	68-103-26-2	0.1	pH Unit	5.0	68-103-26-2			68-103-26-2	68-103-26-2
EN33a-P: After HCl pH	68-103-26-2	0.1	pH Unit	5.0	68-103-26-2			68-103-26-2	68-103-26-2
EN33a-P: Extraction Fluid Number	68-103-26-2	1	-	1	68-103-26-2			68-103-26-2	68-103-26-2
EN33a-P: Final pH	68-103-26-2	0.1	pH Unit	5.0	68-103-26-2			68-103-26-2	68-103-26-2
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4337059)									
EK067G: Total Phosphorus as P	68-103-26-2	2	mg/kg	<2	142 mg/kg	112	70.0	130	
				<2	1200 mg/kg	90.1	79.0	121	

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Control Spike (LCS) Report					
Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)	
				Result		LCS	Low	High	
EG005(ED093)C: Leachable Metals by ICPAES (QCLot: 4347028)									
EG005C: Arsenic	7440-38-2	0.1	mg/L	<0.1	0.1 mg/L	100	89.0	123	
EP071: Total Petroleum Hydrocarbons (QCLot: 4349647)									
EP071-SV: C10 - C14 Fraction	NA-NA-NA	50	µg/L	<50	1070 µg/L	82.9	51.9	126	
EP071-SV: C15 - C28 Fraction	NA-NA-NA	100	µg/L	<100	1770 µg/L	83.7	51.4	124	
EP071-SV: C29 - C36 Fraction	NA-NA-NA	50	µg/L	<50	NA-NA-NA	NA-NA-NA	NA-NA-NA	NA-NA-NA	
EP071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4349647)									
EP071-SV: >C10 - C16 Fraction	NA-NA-NA	100	µg/L	<100	1560 µg/L	83.3	53.2	125	
EP071-SV: >C16 - C34 Fraction	NA-NA-NA	100	µg/L	<100	1190 µg/L	82.8	49.5	123	
EP071-SV: >C34 - C40 Fraction	NA-NA-NA	100	µg/L	<100	NA-NA-NA	NA-NA-NA	NA-NA-NA	NA-NA-NA	
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4355229)									
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	129	72.0	130	
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	115	71.0	127	
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.475 µg/L	111	68.0	131	
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	119	69.0	134	
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	121	65.0	140	
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	106	53.0	142	
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4355229)									
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	120	73.0	129	
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	115	72.0	129	
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	116	72.0	129	



Sub-Matrix: **WATER**

Sub-Matrix: WATER			Laboratory Control Spike (LCS) Report					
Method: Compound			Method Blank (MB) Report		Spike Recovery (%)			
			Result	Concentration	Spike	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4355229) - continued								
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	126	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	125	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	105	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	105	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	119	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	120	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	138	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	121	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4355229)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	132	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	129	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	130	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	130	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	129	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	110	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	129	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4355229)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	98.5	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	134	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	119	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	112	62.2	139
EP231P: PFAS Sums (QCLot: 4355229)								
EP231X-INJ: Sum of PFAS	-----	0.01	µg/L	<0.01	-----	-----	-----	-----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	-----	-----	-----	-----
EP231X-INJ: Sum of PFAS (WA DER List)	-----	0.01	µg/L	<0.01	-----	-----	-----	-----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Matrix Spike (MS) Report			
Laboratory sample ID	Sample ID	CAS Number	Method: Compound
Spike		Concentration	MS
Spike Recovery(%)		Acceptable Limits (%)	High



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4337059)							
EB2213024-002	Anonymous	EK067G: Total Phosphorus as P	-----	100 mg/kg	118	70.0	130

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Matrix Spike (MS) Report			
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EG005(ED093)C: Leachable Metals by ICPAES (QCLot: 4347028)							
EB2212821-002	Anonymous	EG005C: Arsenic	7440-38-2	1 mg/L	106	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4355229)							
EB2213149-008	BH03-1 TCLP Leachate	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.443 µg/L	124	70.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.47 µg/L	104	70.0	130
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.475 µg/L	102	70.0	130
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	107	70.0	130
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	106	70.0	130
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	95.8	70.0	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4355229)							
EB2213149-008	BH03-1 TCLP Leachate	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	103	70.0	130
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	109	70.0	130
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	105	70.0	130
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	120	70.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	126	70.0	130
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	103	70.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	107	70.0	130
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	108	70.0	130
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	110	70.0	130
		EP231X-INJ: Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.5 µg/L	116	70.0	130
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	113	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4355229)							
EB2213149-008	BH03-1 TCLP Leachate	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	121	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	125	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	112	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	117	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	121	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	108	70.0	130



Sub-Matrix: **WATER**

Sub-Matrix: WATER			Matrix Spike (MS) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike		SpikeRecovery(%)		Acceptable Limits (%)	
				Concentration	MS	Low	High		
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4355229) - continued									
EB2213149-008	BH03-1 TCLP Leachate	EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	109	70.0	130		
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4355229)									
EB2213149-008	BH03-1 TCLP Leachate	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.468 µg/L	108	70.0	130		
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.475 µg/L	117	70.0	130		
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	99.2	70.0	130		
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	106	70.0	130		



Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EB2213149	Page	: 1 of 7
Client	: BUTLER PARTNERS PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MS SUZANNE WALKER	Telephone	: +61-7-3243 7222
Project	: 018-150M	Date Samples Received	: 09-May-2022
Site	: 89 Macarthur Ave, Hamilton	Issue Date	: 24-May-2022
Sampler	: ----	No. of samples received	: 10
Order number	: BP202128	No. of samples analysed	: 10

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.

Matrix: SOIL

Outliers : Frequency of Quality Control Samples

Analysis Holding Time Compliance

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Method		Sample Date	Extraction / Preparation		Analysis	
Container / Client Sample ID(s)	Date extracted		Due for extraction	Evaluation	Date analysed	Due for analysis
EA055: Moisture Content (Dried @ 105-110°C)						
Soil Glass Jar - Unpreserved (EA055)						
BH23-1		13-Apr-2022				
Soil Glass Jar - Unpreserved (EA055)						
BH29-1,	BH31-1,	14-Apr-2022				
BH32-2						



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

Method	Sample Date	Extraction / Preparation		Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Due for analysis
EK067G: Total Phosphorus as P by Discrete Analyser					
Soil Glass Jar - Unpreserved (EK067G)					
BH23-1	13-Apr-2022	16-May-2022	11-May-2022	✗	13-Jun-2022
BH29-1, BH32-2	14-Apr-2022	16-May-2022	12-May-2022	✗	13-Jun-2022
EN33: TCLP Leach - Inorganics/Non-Volatile Organics (Glass Vessel)					
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN33a-G)					
BH03-2 - TCLP Leachate	12-Apr-2022	13-May-2022	09-Oct-2022	✓	---
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN33a-G)	13-Apr-2022	13-May-2022	10-Oct-2022	✓	---
EN33: TCLP Leach - Inorganics/PFAS (Plastic Vessel)					
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN33a-P)					
BH03-1 - TCLP Leachate	12-Apr-2022	13-May-2022	09-Oct-2022	✓	---
EN60-DI: Bottle Leaching Procedure - Inorganics/Non-Volatile Organics (Glass Vessel)					
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN60-DIa-G)					
BH03-2 - DI Leachate	12-Apr-2022	13-May-2022	09-Oct-2022	✓	---
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN60-DIa-G)	13-Apr-2022	13-May-2022	10-Oct-2022	✓	---
EN60-DI: Bottle Leaching Procedure - Inorganics/PFAS (Plastic Vessel)					
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN60-DIa-P)					
BH03-1 - DI Leachate	12-Apr-2022	13-May-2022	09-Oct-2022	✓	---
Matrix: WATER					
Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.					
Method	Sample Date	Extraction / Preparation		Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Due for analysis
EG005(ED093)C: Leachable Metals by ICPAES					
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG005C)					
BH03-2 - DI Leachate,	13-May-2022	20-May-2022	09-Nov-2022	✓	09-Nov-2022
EP071: Total Petroleum Hydrocarbons					
Amber Glass Bottle - Unpreserved (EP071-SV)					
BH19-5 - DI Leachate,	13-May-2022	20-May-2022	20-May-2022	✓	29-Jun-2022
EP071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions					
Amber Glass Bottle - Unpreserved (EP071-SV)					
BH19-5 - DI Leachate,	13-May-2022	20-May-2022	20-May-2022	✓	29-Jun-2022
EP231A: Perfluoroalkyl Sulfonic Acids					
HDPE (no PTFE) (EP231X-INJ)					
BH03-1 - DI Leachate,	13-May-2022	24-May-2022	09-Nov-2022	✓	09-Nov-2022
EP231B: Perfluoroalkyl Carboxylic Acids					
HDPE (no PTFE) (EP231X-INJ)					
BH03-1 - DI Leachate,	13-May-2022	24-May-2022	09-Nov-2022	✓	09-Nov-2022



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

Method		Sample Date	Extraction / Preparation		Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Due for analysis
EP231C: Perfluoroalkyl Sulfonamides						
HDPE (no PTFE) (EP231X-INJ) BH03-1 - DI Leachate,	BH03-1 - TCLP Leachate	13-May-2022	24-May-2022	09-Nov-2022	✓	09-Nov-2022
						✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids						
HDPE (no PTFE) (EP231X-INJ) BH03-1 - DI Leachate,	BH03-1 - TCLP Leachate	13-May-2022	24-May-2022	09-Nov-2022	✓	09-Nov-2022
						✓
EP231P: PFAS Sums						
HDPE (no PTFE) (EP231X-INJ) BH03-1 - DI Leachate,	BH03-1 - TCLP Leachate	13-May-2022	24-May-2022	09-Nov-2022	✓	09-Nov-2022
						✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count			Rate (%)			Quality Control Specification	
Analytical Methods		Method	QC	Regular	Actual	Expected	Evaluation		
Laboratory Duplicates (DUP)									
Moisture Content		EA055	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Phosphorus By Discrete Analyser		EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Laboratory Control Samples (LCS)									
Total Phosphorus By Discrete Analyser		EK067G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard	
Method Blanks (MB)									
TCLP for Non & Semivolatile Analytes - Glass Leaching Vessel		EN33a-G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
TCLP for Non & Semivolatile Analytes - Plastic Leaching Vessel		EN33a-P	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Total Phosphorus By Discrete Analyser		EK067G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	
Matrix Spikes (MS)									
Total Phosphorus By Discrete Analyser		EK067G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard	

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Method	Count		Rate (%)		Quality Control Specification	
Analytical Methods			QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)								
Leachable Metals by ICPAES		EG005C	2	9	22.22	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS		EP231X-INJ	1	2	50.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semi-volatile Fractions Only		EP071-SV	0	2	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)								
Leachable Metals by ICPAES		EG005C	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS		EP231X-INJ	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semi-volatile Fractions Only		EP071-SV	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)								
Leachable Metals by ICPAES		EG005C	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS		EP231X-INJ	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semi-volatile Fractions Only		EP071-SV	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)								
Leachable Metals by ICPAES		EG005C	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS		EP231X-INJ	1	2	50.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semi-volatile Fractions Only		EP071-SV	0	2	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Leachable Metals by ICPAES	EG005C	SOIL	In house: referenced to APHA 3120; USEPA SW 846 - 6010: The ICPAES technique ionises leachate sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM Schedule B(3).
Total Phosphorus By Discrete Analyser	EK067G	SOIL	In house: Referenced to APHA 4500 P-B&F This procedure involves sulfuric acid digestion and quantification using Discrete Analyser.
TRH - Semivolatile Fractions Only	EP071-SV	SOIL	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	SOIL	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	SOIL	In house: Referenced to APHA 4500 Norg- D; APHA 4500 P - H. Macro Kjeldahl digestion.
Digestion for Total Recoverable Metals in TCLP Leachate	EN25C	SOIL	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
TCLP for Non & Semivolatile Analytes - Glass Leaching Vessel	EN33a-G	SOIL	In house QWI-EN/33 referenced to USEPA SW846-1311: The TCLP procedure is designed to determine the mobility of both organic and inorganic analytes present in wastes. The standard TCLP leach is for non-volatile and Semivolatile test parameters.
TCLP for Non & Semivolatile Analytes - Plastic Leaching Vessel	EN33a-P	SOIL	In house QWI-EN/33 referenced to USEPA SW846-1311: The TCLP procedure is designed to determine the mobility of both organic and inorganic analytes present in wastes. The standard TCLP leach is for non-volatile and Semivolatile test parameters.
Deionised Water Leach - Glass Leaching Vessel	EN60-DIa-G	SOIL	In house QWI-EN/60 referenced to AS4439.3 Preparation of Leachates
Deionised Water Leach - Plastic Leaching Vessel	EN60-DIa-P	SOIL	In house QWI-EN/60 referenced to AS4439.3 Preparation of Leachates
Preparation for PFAS in water.	EP231-PR	SOIL	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.



Preparation Methods		Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids		ORG14	SOIL	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Solid Phase Extraction (SPE) for PFAS in water		ORG72	SOIL	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EB2213149

Client	: BUTLER PARTNERS PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MS SUZANNE WALKER	Contact	: Kimberly Hilton-Barber
Address	: PO BOX 2267 FORTITUDE VALLEY BC QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: skwalker@butlerpartners.com.au	E-mail	: k.hiltonbarber@alsglobal.com
Telephone	: +61 07 3852 3800	Telephone	: +61-7-3243 7222
Facsimile	: +61 07 3852 3808	Facsimile	: +61-7-3243 7218
Project	: 018-150M	Page	: 1 of 3
Order number	: BP202128	Quote number	: EB2016BUTPAR0003 (EN/222 (Planned event Tables))
C-O-C number	: 5	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: 89 Macarthur Ave, Hamilton		
Sampler	:		

Dates

Date Samples Received	: 09-May-2022 15:56	Issue Date	: 12-May-2022
Client Requested Due Date	: 24-May-2022	Scheduled Reporting Date	: 24-May-2022

Delivery Details

Mode of Delivery	: Samples On Hand	Security Seal	: Not Available
No. of coolers/boxes	: ---	Temperature	: ---
Receipt Detail	: REBATCH	No. of samples received / analysed	: 10 / 10

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- This work order has been created to rebatch samples from Brisbane work orders EB2210676, EB2210677, EB2210972**
- Please be advised there was a sample ID discrepancy with sample "EB2210972043 BH31-1" as the sample ID for this sample is "BH30-4" ALS has rebatched sample "EB2210972048 BH31-1" in line with the sample ID. If this is incorrect and sample "EB2210972043 BH31-1" is to be rebatched instead please contact Client Services at ALSEnviro.Brisbane@alsglobal.com.**
- Please be advised where two leaches have been requested on the same sample ALS has created an additional sample for reporting and denoted the leach in the description. For any further information please contact Client Services.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



Sample Container(s)/Preservation Non-Compliances

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

- No sample container / preservation non-compliance exists.

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

EB2213149-001	: [12-Apr-2022]	: BH03-1 - DI Leachate
EB2213149-002	: [12-Apr-2022]	: BH03-2 - DI Leachate
EB2213149-003	: [13-Apr-2022]	: BH19-5 - DI Leachate
EB2213149-008	: [12-Apr-2022]	: BH03-1 - TCLP Leachate
EB2213149-009	: [12-Apr-2022]	: BH03-2 - TCLP Leachate
EB2213149-010	: [13-Apr-2022]	: BH19-5 - TCLP Leachate

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: SOIL

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EG05C Leachable Metals by ICPAES	SOIL - EK067G (Solids) Total Phosphorus as P by Discrete Analyser	SOIL - EN60-Dia-G Deionised Water Leach - Glass Leaching Vessel	SOIL - EN60-Dia-P Deionised Water Leach - Plastic Leaching Vessel	SOIL - EP071-SV TRH - SV Fractions only	SOIL - EP231X PFAS - Full Suite (28 analytes)
EB2213149-001	12-Apr-2022 00:00	BH03-1 DI Leachate					✗		✗
EB2213149-002	12-Apr-2022 00:00	BH03-2 DI Leachate		✗		✗			
EB2213149-003	13-Apr-2022 00:00	BH19-5 DI Leachate				✗		✗	
EB2213149-004	13-Apr-2022 00:00	BH23-1	✗		✗				
EB2213149-005	14-Apr-2022 00:00	BH29-1	✗		✗				
EB2213149-006	14-Apr-2022 00:00	BH31-1	✗		✗				
EB2213149-007	14-Apr-2022 00:00	BH32-2	✗		✗				
EB2213149-008	12-Apr-2022 00:00	BH03-1 TCLP Leachate							✗
EB2213149-009	12-Apr-2022 00:00	BH03-2 TCLP Leachate		✗					
EB2213149-010	13-Apr-2022 00:00	BH19-5 TCLP Leachate						✗	

Matrix: SOIL

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EN33a-G TCLP Leachate - Glass Leaching Vessel	SOIL - EN33a-P TCLP Leachate - Plastic Leaching Vessel
EB2213149-008	12-Apr-2022 00:00	BH03-1 TCLP Leachate		✗
EB2213149-009	12-Apr-2022 00:00	BH03-2 TCLP Leachate	✗	
EB2213149-010	13-Apr-2022 00:00	BH19-5 TCLP Leachate	✗	

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.

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

Requested Deliverables

- A4 - AU Tax Invoice (INV)	Email	BPRaccounts@butlerpartners.com.au

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

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

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

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

PO Box 2267, Fortitude Valley, BC Qld 4006
(22 Corunna Street, Albion Qld 4010)
Ph: (07) 3256 2900 Fax: (07) 3256 2901

Job No: 018-150M
Site: 88 Macarthur Ave, Hamilton

Order No: BP202128
COC No. 5

Australian Laboratory Services Pty Ltd
32 Shand Street, Stafford QLD 4053
Ph: (07) 3243 7222

Quotation Number: EN222118 (Butler Partners)										018 Macarthur Ave, Hamilton										BP202128										5										COC No.									
Project Manager: Suzanne Walker										88 Macarthur Ave, Hamilton										018-150M										5										COC No.									
Sampled By: Richard Pearce										88 Macarthur Ave, Hamilton										018-150M										5										COC No.									
Results To: Suzanne Walker (skwalker@butlerpartners.com.au)										88 Macarthur Ave, Hamilton										018-150M										5										COC No.									
Mike Melles (mmelles@butlerpartners.com.au)										88 Macarthur Ave, Hamilton										018-150M										5										COC No.									
Richard Pearce (rpearce@butlerpartners.com.au)										88 Macarthur Ave, Hamilton										018-150M										5										COC No.									
Richard Pearce										88 Macarthur Ave, Hamilton										018-150M										5										COC No.									
Relinquished by: B2accounts@butlerpartners.com.au										88 Macarthur Ave, Hamilton										018-150M										5										COC No.									
Invoice To: 14 April 2022										88 Macarthur Ave, Hamilton										018-150M										5										COC No.									
Data Sample Submitted to External Lab:										88 Macarthur Ave, Hamilton										018-150M										5										COC No.									
Due Date: 5 Day TAT										88 Macarthur Ave, Hamilton										018-150M										5										COC No.									
Special Instructions:										88 Macarthur Ave, Hamilton										018-150M										5										COC No.									
Fire Ant Zone? Yes - BIP-RIFA-G003										88 Macarthur Ave, Hamilton										018-150M										5										COC No.									
Lab Sample No.	Sample Reference	Sample Depth	Sample Type	No. of Jars/Vials	Date Sampled	S-2	8 metals	Total P	Neutral (D1) Leach: PFAS Full Suite	TCLP Leach: PFAS Full Suite	S-7	S-8	S-12	S-23	PAH	OC Pesticides	S-26	TRH / BTEXN / PAH / 8 Metals	pH and EC	Exchangeable Cations, ECOC and ESP	Total N (incl TKN and Nox)	Ammonia (NH3)	Neutral (D1) Leach: As	TCLP Leach: As	Neutral (D1) Leach: TRH (none volatile fractions)	TCLP Leach: TRH (none volatile fractions)																							
EB2210676018	BH03-1	0.02-0.2	soil	1 Jar / 1 PFAS	12-Apr-22				x	x																																							
EB2210676019	BH03-2	0.3-0.5	soil	1 Jar	12-Apr-22																																												
EB2210677044	BH10-5	1.8-2.0	soil	1 Jar	13-Apr-22																																												
EB2210677070	BH23-1	0.02-0.25	soil	1 Jar	13-Apr-22			x																																									
EB2210672034	BH29-1	0.15-0.25	soil	1	14-Apr-22			x																																									
EB2210672043	BH31-1	0.15-0.25	soil	1	14-Apr-22			x																																									
EB2210672057	BH32-2	0.4-0.5	soil	1	14-Apr-22			x																																									
TOTALS:								1	1	1																																							

Environmental Division
Brisbane
Work Order Reference: 100

Environmental Division
Brisbane
Work Order Reference
EB2213149



Telephone : + 61-7-3243 7222

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne

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

Sydney

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

Brisbane

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

Newcastle

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

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth

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

Eurofins Environment Testing NZ Limited

NZBN: 9429046024954

Auckland

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

Christchurch

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

Sample Receipt Advice

Company name: Butler Partners P/L (QLD)
Contact name: Mike Melles
Project name: 89 MACARTHUR AVE HAMILTON
Project ID: 018-150M
Turnaround time: 5 Day
Date/Time received: Apr 20, 2022 4:00 PM
Eurofins reference: 881910

Sample Information

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

Notes

Contact

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

Peter Brand on phone : or by email: PeterBrand@eurofins.com

Results will be delivered electronically via email to Mike Melles - mmelles@butlerpartners.com.au.

Note: A copy of these results will also be delivered to the general Butler Partners P/L (QLD) email address.



Melbourne

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

Sydney

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

Brisbane

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

Newcastle

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

Auckland

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

Christchurch

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

Company Name: Butler Partners P/L (QLD)
Address: 22 Corunna Street
Albion
QLD 4010
Project Name: 89 MACARTHUR AVE HAMILTON
Project ID: 018-150M

Order No.: BP202053
Report #: 881910
Phone: 07 3256 2900
Fax: 07 3256 2901

Received: Apr 20, 2022 4:00 PM
Due: Apr 28, 2022
Priority: 5 Day
Contact Name: Mike Melles

Eurofins Analytical Services Manager : Peter Brand

Sample Detail					Metals M8	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						
Sydney Laboratory - NATA # 1261 Site # 18217						
Brisbane Laboratory - NATA # 1261 Site # 20794					X	X
Mayfield Laboratory - NATA # 1261 Site # 25079						
Perth Laboratory - NATA # 2377 Site # 2370						
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	QC02	Apr 12, 2022		Soil	B22- Ap0044368	X
2	QC04	Apr 12, 2022		Soil	B22- Ap0044369	X
3	QC06	Apr 13, 2022		Soil	B22- Ap0044370	X
4	QC08	Apr 14, 2022		Soil	B22- Ap0044371	X
5	QC10	Apr 14, 2022		Soil	B22- Ap0044372	X
6	QC12	Apr 14, 2022		Soil	B22-	X



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

Environment Testing

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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

Sydney
179 Magowar Road
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PO Box 60 Wickham 2293
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Perth
46-48 Banksia Road
Weshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
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ABN: 91 05 0159 898

Eurofins Environment Testing NZ Limited

NZBN: 9429046024954

Company Name: Butler Partners P/L (QLD)
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QLD 4010
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Received: Apr 20, 2022 4:00 PM
Due: Apr 28, 2022
Priority: 5 Day
Contact Name: Mike Melles

Eurofins Analytical Services Manager : Peter Brand

Sample Detail				Metals M8	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254					
Sydney Laboratory - NATA # 1261 Site # 18217					
Brisbane Laboratory - NATA # 1261 Site # 20794				X	X
Mayfield Laboratory - NATA # 1261 Site # 25079					
Perth Laboratory - NATA # 2377 Site # 2370					
External Laboratory					
				Ap0044373	
Test Counts				6	6

Butler Partners P/L (QLD)
22 Corunna Street
Albion
QLD 4010



NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Attention: **Mike Melles**

Report **881910-S**
Project name **89 MACARTHUR AVE HAMILTON**
Project ID **018-150M**
Received Date **Apr 20, 2022**

Client Sample ID			QC02	QC04	QC06	QC08
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			B22- Ap0044368	B22- Ap0044369	B22- Ap0044370	B22- Ap0044371
Date Sampled			Apr 12, 2022	Apr 12, 2022	Apr 13, 2022	Apr 14, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	42	2.7	20	6.5
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	5	mg/kg	21	11	9.2	17
Copper	5	mg/kg	7.0	< 5	17	13
Lead	5	mg/kg	13	< 5	17	21
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	9.4	< 5	12
Zinc	5	mg/kg	10.0	18	< 5	44
% Moisture	1	%	6.2	6.7	2.0	16

Client Sample ID			QC10	QC12
Sample Matrix			Soil	Soil
Eurofins Sample No.			B22- Ap0044372	B22- Ap0044373
Date Sampled			Apr 14, 2022	Apr 14, 2022
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	2	mg/kg	2.4	7.5
Cadmium	0.5	mg/kg	< 0.5	< 0.5
Chromium	5	mg/kg	16	68
Copper	5	mg/kg	< 5	34
Lead	5	mg/kg	6.5	13
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	9.7	77
Zinc	5	mg/kg	22	86
% Moisture	1	%	5.5	14

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

Metals M8

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Brisbane

Brisbane

Extracted

May 04, 2022

Apr 22, 2022

Holding Time

28 Days

14 Days



Melbourne

6 Monterey Road
Dandenong South VIC 3175
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NATA # 1261 Site # 1254

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Christchurch

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

Company Name: Butler Partners P/L (QLD)
Address: 22 Corunna Street
Albion
QLD 4010
Project Name: 89 MACARTHUR AVE HAMILTON
Project ID: 018-150M

Order No.: BP202053
Report #: 881910
Phone: 07 3256 2900
Fax: 07 3256 2901

Received: Apr 20, 2022 4:00 PM
Due: Apr 28, 2022
Priority: 5 Day
Contact Name: Mike Melles

Eurofins Analytical Services Manager : Peter Brand

Sample Detail					Metals M8	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254						
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Brisbane Laboratory - NATA # 1261 Site # 20794					X	X
Mayfield Laboratory - NATA # 1261 Site # 25079						
Perth Laboratory - NATA # 2377 Site # 2370						
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	QC02	Apr 12, 2022		Soil	B22- Ap0044368	X
2	QC04	Apr 12, 2022		Soil	B22- Ap0044369	X
3	QC06	Apr 13, 2022		Soil	B22- Ap0044370	X
4	QC08	Apr 14, 2022		Soil	B22- Ap0044371	X
5	QC10	Apr 14, 2022		Soil	B22- Ap0044372	X
6	QC12	Apr 14, 2022		Soil	B22-	X



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

Environment Testing

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
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Auckland
35 O'Rourke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

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

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

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

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

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

Company Name: Butler Partners P/L (QLD)
Address: 22 Corunna Street
Albion
QLD 4010
Project Name: 89 MACARTHUR AVE HAMILTON
Project ID: 018-150M

Order No.: BP202053
Report #: 881910
Phone: 07 3256 2900
Fax: 07 3256 2901

Received: Apr 20, 2022 4:00 PM
Due: Apr 28, 2022
Priority: 5 Day
Contact Name: Mike Melles

Eurofins Analytical Services Manager : Peter Brand

Sample Detail				Metals M8	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254					
Sydney Laboratory - NATA # 1261 Site # 18217					
Brisbane Laboratory - NATA # 1261 Site # 20794				X	X
Mayfield Laboratory - NATA # 1261 Site # 25079					
Perth Laboratory - NATA # 2377 Site # 2370					
External Laboratory					
				Ap0044373	
Test Counts				6	6

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

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

Terms

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

QC - Acceptance Criteria

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

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

Results <10 times the LOR: No Limit

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

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

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

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

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

QC Data General Comments

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

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Heavy Metals									
Arsenic			mg/kg	< 2			2	Pass	
Cadmium			mg/kg	< 0.5			0.5	Pass	
Chromium			mg/kg	< 5			5	Pass	
Copper			mg/kg	< 5			5	Pass	
Lead			mg/kg	< 5			5	Pass	
Mercury			mg/kg	< 0.1			0.1	Pass	
Nickel			mg/kg	< 5			5	Pass	
Zinc			mg/kg	< 5			5	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	102			80-120	Pass	
Cadmium			%	108			80-120	Pass	
Chromium			%	105			80-120	Pass	
Copper			%	102			80-120	Pass	
Lead			%	104			80-120	Pass	
Mercury			%	94			80-120	Pass	
Nickel			%	99			80-120	Pass	
Zinc			%	98			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals									
				Result 1					
Arsenic	B22-Ap0037869	NCP	%	96			75-125	Pass	
Cadmium	B22-Ap0037869	NCP	%	103			75-125	Pass	
Chromium	B22-Ap0037869	NCP	%	107			75-125	Pass	
Copper	B22-Ap0037869	NCP	%	105			75-125	Pass	
Lead	B22-Ap0037869	NCP	%	105			75-125	Pass	
Mercury	B22-Ap0037869	NCP	%	97			75-125	Pass	
Nickel	B22-Ap0037869	NCP	%	105			75-125	Pass	
Zinc	B22-Ap0037869	NCP	%	102			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals									
				Result 1	Result 2	RPD			
Cadmium	B22-Ap0037868	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mercury	B22-Ap0009552	NCP	mg/kg	0.2	0.2	30	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	B22-Ap0043645	NCP	%	< 1	2.0	200	30%	Fail	Q15
Duplicate									
Heavy Metals									
				Result 1	Result 2	RPD			
Arsenic	B22-Ap0044370	CP	mg/kg	20	22	13	30%	Pass	
Chromium	B22-Ap0044370	CP	mg/kg	9.2	11	19	30%	Pass	
Copper	B22-Ap0044370	CP	mg/kg	17	20	14	30%	Pass	
Lead	B22-Ap0044370	CP	mg/kg	17	19	12	30%	Pass	
Nickel	B22-Ap0044370	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	B22-Ap0044370	CP	mg/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Zoe Flynn	Analytical Services Manager
Sarah McCallion	Senior Analyst (NSW)
Jonathon Angell	Senior Analyst (NSW)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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

Client:	Butler Partners Pty Ltd	Date Sampled:	12 April 2022
Client Address:	11 Moore Street, Albion QLD 4010	Date Received:	20 April 2022
Client Contact:	Mike Melles	Date Analysed:	27 April 2022
Phone No:	(07) 3256 2900	Order No:	BP202055
Email:	mmelles@butlerpartners.com.au	Sampled By:	As received by client
Site/Location:	018-150M (89 MacArthur Avenue, Hamilton) COC04	Certificate No:	HL2799.S.1

CERTIFICATE OF ANALYSIS

Laboratory Fibre Identification - Non-Homogenous Sample Analysis

Analysis Method:

Samples submitted to HazSure Laboratory for qualitative fibre identification are subjected to polarised light microscopy including dispersion staining techniques. Examination of samples is completed in accordance with AS4964-2004 Method for qualitative identification of asbestos in bulk samples and HazSure's in-house method ID1 Fibre Identification.

Lab No.	Sample No.	Sample Description	Sample Material	Weight (g)	Fibres Identified in Material	Trace Asbestos
1	BH01-2	Sample Depth = 0.3-0.5	Soil	53.67	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
2	BH03-2	Sample Depth = 0.3-0.5	Soil	157.85	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
3	BH07-1	Sample Depth = 0.02-0.2	Soil	121.83	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
4	BH08-2	Sample Depth = 0.02-0.2	Soil	167.23	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
5	BH11-1	Sample Depth = 0.25-0.5	Soil	108.37	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
6	BH14-2	Sample Depth = 0.3-0.5	Soil	90.48	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
7	BH14-3	Sample Depth = 0.8-1.0	Soil	134.81	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
8	BH15-2	Sample Depth = 0.4-0.5	Soil	179.58	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
9	BH17-1	Sample Depth = 0.02-0.25	Soil	168.49	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos

Legend:

- CH** Chrysotile asbestos detected
- AM** Amosite asbestos detected
- CR** Crocidolite asbestos detected
- NAD** No asbestos detected
- OF** Organic fibres detected
- SMF** Synthetic mineral fibre detected
- UMF** Unknown mineral fibre detected

Approved Identifier:



Name: Adam Maurice

Approved Signatory:



Name: Myles Stace

Notes:

HazSure accepts no responsibility for the collection, packaging and or transportation of samples submitted to the laboratory by external persons. All samples received are analysed as received and results relate specifically to the samples submitted for testing. Sample descriptions are as provided by the client. If no descriptions are provided the laboratory will label them as per the sample number. Sampling is not covered by HazSure's accreditation. This document may not be reproduced except in full.

*If denoted by an asterisk, the sample may not meet the minimum requirements to perform a sufficient analysis. In this event the client has been notified, and analysis carried out with that understanding

In the case of an "NAD" result, refer to AS4964-2004: 9.5 - Non-homogenous Samples - No Asbestos Evident (trace analysis required) "Notes: 2. The above results can be interpreted that the sample contains no detectable 'respirable' asbestos fibres."

Client: Butler Partners Pty Ltd **Date Sampled:** 12 April 2022
Site/ Location: 018-150M (89 MacArthur Avenue, Hamilton) COC04 **Certificate No:** HL2799.S.1

CERTIFICATE OF ANALYSIS

Laboratory Fibre Identification - Non-Homogenous Sample Analysis

Analysis Method:

Samples submitted to HazSure Laboratory for qualitative fibre identification are subjected to polarised light microscopy including dispersion straining techniques. Examination of samples is completed in accordance with AS4964-2004 Method for qualitative identification of asbestos in bulk samples and HazSure's in-house method ID1 Fibre Identification.

Lab No.	Sample No.	Sample Description	Sample Material	Weight (g)	Fibres Identified in Material	Trace Asbestos
10	BH19-1	Sample Depth = 0.02-0.25	Soil	181.24	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
11	BH21-1	Sample Depth = 0.1-0.3	Soil	150.48	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
12	BH23-1	Sample Depth = 0.02-0.25	Soil	97.77	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
13	BH26-1	Sample Depth = 0.1-0.3	Soil	107.27	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
14	BH27-2	Sample Depth = 0.3-0.5	Soil	122.06	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
15	BH29-2	Sample Depth = 0.3-0.5	Soil	110.14	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
16	BH31-1	Sample Depth = 0.015-0.25	Soil	111.59	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos
17	BH32-2	Sample Depth = 0.4-0.5	Soil	139.76	NAD, OF at reporting limit of 0.1g/kg	No Trace Asbestos

Legend:

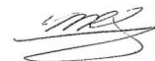
- CH** Chrysotile asbestos detected
- AM** Amosite asbestos detected
- CR** Crocidolite asbestos detected
- NAD** No asbestos detected
- OF** Organic fibres detected
- SMF** Synthetic mineral fibre detected
- UMF** Unknown mineral fibre detected

Approved Identifier:



Name: Adam Maurice

Approved Signatory:



Name: Myles Stace

Notes:

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*If denoted by an asterisk, the sample may not meet the minimum requirements to perform a sufficient analysis. In this event the client has been notified, and analysis carried out with that understanding

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HL 2799

Butler Partners Pty Ltd

PO Box 2267, Fortitude Valley BC Qld 4006
(11 Moore Street, Albion Qld 4010)
Ph: (07) 3256 2900 Fax: (07) 3256 2901

Hazsure Consultants

HazSure Pty Ltd
2/22 Mayneview St, Milton QLD 4064

Ph: 07 3157 25
Mobile: 0438 1

BP202055

Order No.:
COC No.:

Job No.: 018-150M
Site: 89 Mearthur Ave, Hamilton

Quotation Number:

Project Manager:

Sampled By:

Results To:

Relinquished by:

Invoices to:

Date Sample Submitted to External Lab:

Due Date:

Special Instructions:

Fire Ant Zone?

Mike Melles

Richard Pearce

Richard Pearce (rpearce@butlerpartners.com.au)

Mike Melles (mmelles@butlerpartners.com.au)

Suzanne Walker (skwalker@butlerpartners.com.au)

BPaccounts@butlerpartners.com.au

20 April 2022

28-Apr-22

Yes - BIP-RIFA-G003

ASBESTOS (Presence / Absence)				HOLD											
Lab Sample No.	Sample Reference	Sample Depths	Sample Type	No. of Jars/Vials	Date Sampled										
	BH01-2	0.3-0.5	soil	1	12-Apr-22	X									X
	BH02-2	0.4-0.5	soil	1	12-Apr-22										
	BH03-2	0.3-0.5	soil	1	12-Apr-22	X									X
	BH04-2	0.4-0.5	soil	1	12-Apr-22										X
	BH05-2	0.3-0.5	soil	1	12-Apr-22										X
	BH06-2	0.3-0.5	soil	1	12-Apr-22										X
	BH07-1	0.02-0.2	soil	1	12-Apr-22	X									
	BH08-2	0.02-0.2	soil	1	12-Apr-22	X									
	BH09-1	0.02-0.2	soil	1	12-Apr-22										X
	BH10-2	0.4-0.5	soil	1	14-Apr-22										X
	BH11-1	0.25-0.5	soil	1	13-Apr-22	X									
	BH12-1	0.02-0.25	soil	1	13-Apr-22										X
	BH13-1	0.2-0.25	soil	1	13-Apr-22										X
	BH14-2	0.3-0.5	soil	1	13-Apr-22	X									
	BH14-3	0.8-1.0	soil	1	13-Apr-22	X									
	BH15-2	0.4-0.5	soil	1	13-Apr-22	X									
	BH16-1	0.02-0.25	soil	1	13-Apr-22										X
	BH17-1	0.02-0.25	soil	1	13-Apr-22	X									
	BH18-1	0.02-0.25	soil	1	13-Apr-22										X
	BH19-1	0.02-0.25	soil	1	13-Apr-22	X									

Butler Partners Pty Ltd

PO Box 2267, Fortitude Valley BC Qld 4006
(11 Moore Street, Albion Qld 4010)
Ph: (07) 3256 2900 Fax: (07) 3256 2901

Hazsure Consultants

HazSure Pty Ltd
2/22 Mayneview St, Milton QLD 4064

Ph: 07 3157 25
Mobile: 0438 1

BP202055

Job No.: 018-150M
Site: 89 Mcarthur Ave, Hamilton
Order No.:
COC No.: 4

Quotation Number:

Project Manager:

Sampled By:

Results To:

Relinquished by:

Invoices to:

Date Sample Submitted to External Lab:

Due Date:

Special Instructions:

Fire Ant Zone?

Mike Meiles

Richard Pearce

Richard Pearce (rpearce@butlerpartners.com.au)

Mike Meiles (mmeiles@butlerpartners.com.au)

Suzanne Walker (skwalker@butlerpartners.com.au)

BPaccounts@butlerpartners.com.au

20 April 2022

28-Apr-22

Yes - BIP-RIFA-G003

Lab Sample No.	Sample Reference	Sample Depths	Sample Type	No. of Jars/Vials	Date Sampled	ASBESTOS (Presence / Absence)	HOLD
BH19-5	soil	1.8-2.0	1	13-Apr-22			X
BH20-2	soil	0.3-0.5	1	13-Apr-22			X
BH21-1	soil	0.1-0.3	1	13-Apr-22		X	
BH22-2	soil	0.4-0.5	1	13-Apr-22			X
BH23-1	soil	0.02-0.25	1	13-Apr-22		X	
BH24-1	soil	0.14-0.30	1	13-Apr-22			X
BH25-1	soil	0.02-0.25	1	14-Apr-22		X	
BH26-1	soil	0.1-0.3	1	14-Apr-22		X	
BH27-2	soil	0.3-0.5	1	14-Apr-22			X
BH28-2	soil	0.3-0.5	1	14-Apr-22		X	
BH29-2	soil	0.3-0.5	1	14-Apr-22			X
BH30-1	soil	0.12-0.25	1	14-Apr-22		X	
BH31-1	soil	0.015-0.25	1	14-Apr-22		X	
BH32-2	soil	0.4-0.5	1	14-Apr-22		X	

Soil RPD Results

Sample Date	Sample Duplicate	Sample Number	Sample Depth	Material Type	Inorganics (mg/kg)							
					Metals							
					As	Cd	Total Cr	Cu	Pb	Hg	Ni	Zn
12/04/2022	QC01 & QC02	BH02-1	0.25-0.35	Fill	8	<1	10	8	7	<0.1	3	18
12/04/2022	Blind	QC01	0.25-0.35	Fill	14	<1	42	6	8	<0.1	2	12
12/04/2022	Split	QC02	0.25-0.35	Fill	42	<0.5	21	7	13	<0.1	<5	10
Blind Duplicate					55	NA	123	29	13	NA	40	40
Split Duplicate					136	NA	71	13	60	NA	NA	57
12/04/2022	QC03 & QC04	BH08-4	1.3-1.5	Fill	<5	<1	6	<5	<5	<0.1	7	12
12/04/2022	Blind	QC03	1.3-1.5	Fill	<5	<1	8	8	9	<0.1	6	26
12/04/2022	Split	QC04	1.3-1.5	Fill	2.7	<0.5	11	<5	<5	<0.1	9.4	18
Blind Duplicate					NA	NA	29	NA	NA	NA	15	74
Split Duplicate					NA	NA	59	NA	NA	NA	29	40
13/04/2022	QC05 & QC06	BH22-1	0.2-0.25	Fill	22	<1	9	12	8	<0.1	<2	<5
13/04/2022	Blind	QC05	0.2-0.25	Fill	18	<1	6	15	10	<0.1	<2	7
13/04/2022	Split	QC06	0.2-0.25	Fill	20	<0.5	9.2	17	17	<0.1	<5	<5
Blind Duplicate					20	NA	40	22	22	NA	NA	NA
Split Duplicate					10	NA	2	34	72	NA	NA	NA
14/04/2022	QC07 & QC08	BH32-1	0.1-0.25	Fill	<5	<1	10	13	15	<0.1	9	34
14/04/2022	Blind	QC07	0.1-0.25	Fill	<5	<1	8	8	12	<0.1	8	26
14/04/2022	Split	QC08	0.1-0.25	Fill	6.5	<0.5	17	13	21	<0.1	12	44
Blind Duplicate					NA	NA	22	48	22	NA	12	27
Split Duplicate					NA	NA	52	0	33	NA	29	26
14/04/2022	QC09 & QC10	BH25-4	1.3-1.5	Fill	<5	<1	10	10	34	0.2	9	53
14/04/2022	Blind	QC09	1.3-1.5	Fill	<5	<1	11	5	21	<0.1	8	32
14/04/2022	Split	QC10	1.3-1.5	Fill	2.4	<0.5	16	<5	6.5	<0.1	9.7	22
Blind Duplicate					NA	NA	10	67	47	NA	12	49
Split Duplicate					NA	NA	46	NA	136	NA	7	83
14/04/2022	QC11 & QC12	BH27-3	0.8-1.0	Fill	<5	<1	8	7	7	<0.1	4	7
14/04/2022	Blind	QC11	0.8-1.0	Fill	7	<1	69	27	7	<0.1	38	40
14/04/2022	Split	QC12	0.8-1.0	Fill	7.5	<0.5	68	34	13	<0.1	77	86
Blind Duplicate					NA	NA	158	118	0	NA	162	140
Split Duplicate					NA	NA	158	132	60	NA	180	170

NOTES:

-	RPD value exceeds 50% range
NA	Not Applicable
-	Not analysed

CERTIFICATE OF ANALYSIS

CLIENT: BUTLER PARTNER PTY LTD
22 CORUNNA ST
ALBION QLD 4010

ATTN: Mike MELLES

CC: mmelles@butlerpartners.com.au
skwalker@butlerpartners.com.au
rpearce@butlerpartners.com.au

Laboratory Reference : 22050061
Client Order Number :
Quote Number : EN/222/18
Client Project :
Client Batch Reference :
Date Received : 20/05/2022
Laboratory Number/s : 21PX712-21PX715

Submitting Authority: Richard Pearce, Butler Partners

Number of Samples: 4

Reason for Analysis: Due diligence

HIGH-RESOLUTION GAMMA SPECTROMETRY

Method of Analysis QIS 25279 QHFSS in-house method, based on ISO18589-2&3:2015 (soil) and ISO10703:2021 (water).

Remarks Results indicate individual radionuclide concentration only.
Special Preparations: NIL
Samples CAN be considered as being in secular equilibrium.
Results HAVE NOT been decay corrected to the time of sampling.
Correction factors for full decay series activity should be considered before comparison to regulatory compliance/guideline/action levels as required.

Sample Geometry

- ☒ 85mL Aluminium Jar (with radon tight viton gasket)
☐ 2L Marinelli Beaker
☐ Well Detector Vial
☐ Other ...

Detector Specifications

- ☒ Sys1a: GMX40-76 s/n 53-N13245A
☐ Sys2a: GMX45-P4-76-RB s/n 48-TN22493A
☐ Sys3a: GMX30P4-ST s/n 47-TN50207A
☐ Sys4a: GWL-150-15-S s/n 48-P12566A
☒ Sys5a: GX6020 s/n 5416
☒ Sys6a: GL3825 s/n 8689
☐ Sys7: GMX20P4-70 s/n 54-TN23648B

Calibration File

S1a_80AJ-S_10Aug2021.Clb

S5a_80AJ-S_26July2021.Clb
S6a_80AJ-S_1June2022.Clb

Traceability

- ☒ Standard Radionuclide Source: 85 mL, 1.5 g/cc, sn:2220-84-1 traceable to NIST (USA) national standard.
☐ Standard Radionuclide Source: 2 L, 1.0 g/cc, sn:2220-84-3 traceable to NIST (USA) national standard.
☐ Other ...

Uncertainty

Activity concentrations stated as $x \pm U$ ($k=2$, 95%CI) or as <MDL (minimum detectable level).



Pierre Bouchereau de Pury, Health Physicist
Radiation and Nuclear Sciences
1 July 2022



NATA Accredited
Laboratory 41
Accredited for compliance
with ISO/IEC 17025 -
Testing

21PX712-21PX715

This report overrides all previous reports. The results relate solely to the sample/s as received and are limited to the specific tests undertaken as listed on the report. The results of this report are confidential and are not to be used or disclosed to any other person or used for any other purpose, whether directly or indirectly, unless that use is disclosed or the purpose is expressly authorised in writing by Queensland Health and the named recipient on this report. To the fullest extent permitted by law, Queensland Health will not be liable for any loss or claim (including legal costs calculated on an indemnity basis) which arise because of (a) problems related to the merchantability, fitness or quality of the sample/s, or (b) any negligent or unlawful act or omissions by Queensland Health that is connected with any activities or services provided by Queensland Health under this agreement (including the timing and/or method under which the sample/s were taken, stored or transported).

Enquiries: Principal Health Physicist
Phone (+61) 7 3096 2901

39 Kessels Road
Coopers Plains QLD 4108
AUSTRALIA

PO Box 594
Archerfield QLD 4108
AUSTRALIA

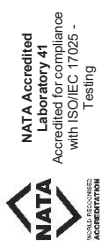
Phone (+61 7) 3096 2900
Fax (+61 7) 3096 2913
Email FSS-RadiationScience@health.qld.gov.au

CERTIFICATE OF ANALYSIS

21PX712-21PX715

Client Reference		SS01	SS02	SS03	BH27-2
Sample Type		Soil	Soil	Soil	Soil
Sample Description		surface	surface	surface	0.3-0.5
Sampling Time / Date		12/04/2022	14/04/2022	14/04/2022	14/04/2022
Preparation Date		25/05/2022	25/05/2022	25/05/2022	25/05/2022
Analysis Date		15/06/2022	15/06/2022	16/06/2022	16/06/2022
Detector		S5a	S1a	S6a	S1a
Sample Corrected Density (g/cc)		1.52	1.46	1.50	1.46
^Sample in analysed matrix by mass (%)		79%	72%	74%	81%
Method	Analysis Description	Comparison Levels	Units	Radionuclide	
QIS 25279	Gamma Spec.	-	Bq/kg	*U238	21PX714
QIS 25279	Gamma Spec.	-	Bq/kg	*Th232	21PX715
QIS 25279	Gamma Spec.	-	Bq/kg	K40	21PX715
	dAKR	-	µG/h	0.28 ± 0.02	0.098 ± 0.010
				0.26 ± 0.03	0.083 ± 0.010

* Radionuclide activity concentration determined from progeny. U238 determined by Pb214 & Bi214, Th232 determined by Ac228.



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Enquiries Principal Health Physicist Phone (+61) 7 3096 2901	39 Kessels Road Coopers Plains QLD 4108 AUSTRALIA	PO Box 594 Archerfield QLD 4108 AUSTRALIA	Phone (+61 7) 3096 2900 Fax (+61 7) 3096 2913 Email FSS-RadiationScience@health.qld.gov.au